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EDITORIAL.

COUGH AS A REFLEX FACTOR.

This is an important subject, because cough is one of the most troublesome and frequent conditions from which patients seek relief, and because we so frequently see patients having an annoying cough with no apparent cause in the chest, pharynx, or larynx.

"Cough is a reflex action cased primarily by some irritation of the sensory fibres of the pneumogastric nerve, or due to mechanical irritation. It has for its object the removal from the air passages of obstructive or irritating materials. It may be excited by the irritation of nerves when there is nothing to be expelled." (C. C. Eves.)

"Cough, as a symptom, is of such frequent occurrence and is diagnostic of so many varied conditions that its study is both necessary and interesting to the student physician. The majority of coughs are due to causes outside the lungs; in fact, 90 per cent of all coughs are extra-thoracic in character." (O. F. Baerens.)

While some writers consider all coughs as reflex in character, the consensus of opinon appears to be that coughs are both direct and reflex.

G. M. Spohn, writing in 1908 on the subject of cough, said:

"Coughing is generally caused by some irritant in the region of the distribution of the pneumogastric nerve. The irritation may be direct, as the inhalation of dust upon the laryngeal mucous membrane, or reflex as the touching of the ear drum."

Further, the same writer said: "The cough center is in the medulla oblongata, near the respiratory center. All the impulses, whether afferent or efferent—passing between the brain and cord—must pass through the medulla. Coughing is controlled by the pneumo-gastric nerve and its plexuses. The origin of the vagus is in the floor of the fourth ventricle, passing out of the skull at the jugular foramen and down on each side of the neck. It sends branches to the ears, pharynx, larynx, pleura, trachea, lungs, bronchi, heart, stomach, spleen, pancreas, liver and intestines. It receives branches from the spinal accessory, facial, hypoglossal, and anterior branches of the first and second cervical nerves. It assists in forming the pharyngeal, laryngeal, pulmonary, esophageal, and cardiac plexuses. It is both a nerve of sensation and motion."

Emil Mayer says in his excellent paper on "Some Unusual Causes of Cough" that Thompson has named fourteen varieties of useless coughs, and Mayer adds:

"The discovery of the sources of these reflex coughs is by no means easy, and the fourteen causes must have many sub-divisions of a hydra-headed nature which arise to harass the investigator. The literature is abundant, and there are those among the more recent writers who still maintain a purely neurotic theory despite all that has been said to the contrary. It cannot be gainsaid that these pressure coughs do their mischief in a direct manner, pressing as they do upon some nerve filament, which in its turn conveys the sensation to the pneumogastric."

Among the causes of reflex coughs the following have been cited: Hepatic, or "liver cough," gastric disturbances, producing the so-called "stomach cough," cardiac aneurism, tobacco heart, edema of the glottis, uterine and ovarian disturbances, growths of the larynx, foreign bodies in the ear, hypertrophy of the lingual tonsil, and elongated uvula, retained secretions in the crypts of the faucial tonsils, umbilical hernia, intestinal worms, pregnancy, cardiac asthenia, mitral stenosis, mitral regurgitation, and follicular pharyngitis.

Dr. Emil Mayer, from whom we have already quoted, cites numerous cases of reflex coughs as recorded by various writers, among them being Babcock with five cases of reflex cough; Warner, whose "paroxysmal, hacking cough of children" was due, in the author's opinion, to an unbalanced central nerve action, since the children had a "normal temperature and the physical signs of healthy lungs;" A. A. Smith, cases of cough due to umbilical hernia, swallowing a peach stone, intestinal worms (two of tapeworms), the use of the galvanic battery, pregnancy, etc.; and Ward's case of cough caused by undigested casein.

Mayer also refers to a writer who, in examining patients for reflex cough due to auricular irritation, found forty-two cases of such cough in two hundred subjects. He quotes the following:

"Foreign bodies cause most trouble, as, for instance, dried cerumen, and these reflex symptoms are often grave enough to simulate severe disease."

He also qotes from a French writer: "The existence of a reflex cough is often forgotten in practice, and, from a theoretical point of view, the subject of lively controversy."

Mayer adds: "The symptoms of this condition are so very apparent that it may generally be stated that a persistent, dry, and hollow cough, without the usual antecedents of acute trouble, failing to yield to treatment in a reasonable space of time, and where, moreover, the physical signs fail to disclose any pulmonary complications, is, without doubt, reflex in origin, and the search for the cause must be thorough and persistent."

In conclusion he says: "There is another class of reflex coughs, where no excitant case can be fond, and where the neurotic element largely predominates, as in neurasthenia. In these the cure depends upon the treatment for the neurosis. The differentiation between a reflex cough of a nervous origin and one due to pressure can only be made by a thorough examination. To recapitulate, we may conclude that a cough is reflex in origin:

1. "When it is spasmodic, practically constant, without expectoration and rise of temperature.
2. "When the physical signs of pulmonary disease are absent.
3. "When it persistently resists all medication.
4. "When the general health remains comparatively undisturbed, and
5. "When upon removal of the cause it promptly ceases."

R. B. HOMAN.

HAY FEVER

Apropos of the work being done by the American Hay Fever Prevention Association, through its research department, the writer undertook recently to determine which of the so-called Hay Fever producing weeds mentioned by Scheppegrell (Journal A. M. A., Vol. XLVI No. 10, 1916) are to be found in New Mexico. With the aid of the head of the Department of Botany of the Agricultural College of New Mexico, the following were identified:

1. Rumexobtusifolius (dock).
2. Plantago lanceolata (plantain).
3. Phalaris intermedia (Canary grass).
4. Xanthium Strumanum (cockle-bur).
5. Sorghum halepense (Johnson grass).
6. Ambrosia trifida (giant ragweed).
7. Ambrosia Artemisiaefolia (common ragweed).
8. Iva ciliata (moist elder).

With the identification of these weeds and the knowledge that their pollen is most likely a factor in hay fever production, physicians attending hay fever patients will do well to enquire into the proximity of these weeds to the dwelling places of the sufferers.

In this issue we publish a paper on hay fever by Doctor Carpenter of El Paso, Texas. In this mention is made of the extreme rarity of hay fever among negroes and Mexicans. This calls to mind a statement made by Woodruff in his book on "The Effects of Tropical Light on White Men," (pages 91 and 92):

"The effect of light in causing sneezing is a well-known phenomemon whose mechanism is not known by any means. There are reported, in addition to this, observations by a Massachusetts doctor, who suffered from hay fever, that somehow strong light brought on the attacks just as in the case of sneezing of normal people. He is said to have succeeded in warding off his own attacks by wearing smoked glasses in the proper season and has succeeded with several patients. Hay fever is rarely, *if ever*, found except in neurotic people, who need only some such mild stimulus to cause neurosis and the report has earmarks of probability. It would be interesting to find out how many of the hay fever sufferers are blonds. By present recollection those whom I have known are mostly blonds, and there is likely to be some relation between the disease and lack of pigment adjustment."

There is much food for thought in the above statement, particularly in this arid section.

CONSIDERATION ASIDE FROM APPENDECTOMY IN SURGERY OF THE APPENDIX.

BY

By JAMES VANCE, M. D., El Paso, Texas.

(Read before the El Paso County Medical Society, March 5th, 1917.)

The experienced surgeon knows that, in a large percentage of cases of appendicitis, the removal of the appendix is not all that is required to cure the patient of his symptoms. This is especially true in chronic appendicitis. In the earlier history of appendectomy, we older men especially, can recall numerous cases which after appendectomy still suffered from annoying attacks of pain and griping in the lower abdomen, similar to mild attacks of appendicitis prior to operation. These post-operative sufferers were blandly told that they had "indigestion" or "adhesions" which were believed to be an unfortunate necessary aftermath to appendectomy. Such cases we rather too frequently see even today.

These cases are more or less operative failures, and it is to the consideration of the causes of these failures that this paper is addressed. It is not the purpose of this article to discuss the numerous mistaken diagnoses, but rather to point out the causes of failure where appendicitis was correctly diagnosed.

We do appendectomy to cure our patients of their sufferings, and it is well known how numerous the complications are that may be found within the abdomen. These complications, in the majority of cases, can and must be relieved to cure the patient; therefore the abdomen must be carefully explored to find them if they exist. A free incision is necessary for exploration and for that reason we do not like the muscle splitting McBurney incision.

Through a free incision the cecum, ileo-cecal valve, the appendix, the first part of the ascending colon, and especially the terminal portion of the ileum will be exposed to view and careful study. It will be remembered that the normal terminal ileum lies in the pelvis perfectly free on its long mesentery like the rest of the small intestine. The mesentery of the terminal ileum grows shorter and shorter, and its lumen diminishes in size, as it approaches the ileo-cecal valve. At the valve the free mesentery is only from two to four inches in length, but is perfectly free, permitting a limited but free excursion of the ileum which it supports. This shortening of the mesentery and contraction of the lumen renders more efficient the ileocecal valve, whose apparent function is to hold back the intestinal current till the small intestine has absorbed all the nutritious solids. The liquid

intestinal contents are then poured into the cecum and colon where the fluids are absorbed and the remaining solid feces are slowly passed through the transverse colon, down into the sigmoidal storehouse to await passage into the rectum at which time it is ejected by the act of defecation.

The cecum is normally mobile to correspond to the restricted terminal ileum, but its normal motility varies very greatly and is of far less importance than the freedom of the terminal ileum.

The appendix is also normally free and mobile on its mesentery which is an addendum to the mesentery of the cecum as the appendix is an attachment of the cecum.

The terminal ileum joins the cecum at nearly a right angle, but its mesentery joins the meso-appendix at an acute angle, and it is in this little ileo-cecal fossa or pocket that most of the havoc is wrought by inflammation in appendicitis.

The appendix lying in the ileo-cecal fossa is in a most excellent position for walling off infections of this treacherous little trouble maker. Unfortunately this blocking of the infection is done by protective adhesions to the ileum or its mesentery and to the cecum. Inflammatory protective adhesions become organized and form peritoneal kinks, bands, and even extensive adhesions. The term "Lane's kink," we think, is an unfortunate one, because the majority of the adhesions are not kinks at all, but are obstructing bands which are so broad and extensive at times as to render the terminal ileum quite as fixed as the ascending colon.

We feel certain that all peritoneal bands and adhesions not excepting Jackson's veil of the cecum and ascending colon are of inflammatory origin. It is further evident that nearly all inflammations in this region are from the appendix.

Excepting retro-cecal appendicitis cases, the cecum is rarely sufficiently hampered by adhesions to interefere with its function, and as we said above cecal adhesions are of little importance compared to those of the terminal ileum.

Adhesions of the terminal ileum by interfering with its free peristalsis interferes with, and delays, the flow of the fecal current into the cecum and colon. This in turn dams back the intestinal contents resulting in stagnation and chemical change in the bowel contents and the production of toxines. To overcome this stagnation the small intestine lying in the lower abdomen resorts to increased peristalsis and the patient complains of griping pains in the lower abdomen. If the stagnation is marked, reversal of peristalsis takes place and the patient is nauseated and may even vomit. If the appendix is at all inflamed these symptoms are all intensified, because the intimate connection of the meso-appendix and the mesentery of the terminal ileum renders peristalsis of the latter impossible without pulling upon the sore appendix. This is the reason that practically

all severe cases of appendicitis, are accompanied by vomiting. In chronic appendicitis, however, the inflammation is not severe enough to cause vomiting but does cause chronic digestive disturbance.

Constipation is the rule in these cases, but not always, since we have seen numerous cases in which the bowels moved well daily, and in one case twice a day, yet there was a low grade appendicitis with terminal ileal adhesions and typical symptoms as above enumerated.

In chronic appendicitis the digestive symptoms are rarely severe, but are more annoying in character, so annoying that the patient is generally ready to submit to operation to get relief.

In operating, the abdomen is first explored, and granting that no complications such as gall stones, pus tubes, etc., are found, the ileo-cecal valve is picked up and the terminal two feet or more of the ileum is drawn out of the abdomen and carefully inspected. In some cases you will find that the ileum can not be withdrawn from the abdomen and you will be surprised to find an adhesion down in the pelvis one to two feet above the ileo-cecal valve. Adhesions will rarely be found above this point, but it only takes an instant to search somewhat higher, and this should always be done.

It is the six inches above the ileo-cecal valve which is most commonly involved, and these adhesions will nearly always be attached to the appendix or meso-appendix. Higher up they usually connect the ileum to the pelvic wall peritoneum or to the peritoneum of some point in the ileo fossa.

Free the adhesions from above down, cutting them away from their attachments so as to give a peritoneal flap sufficiently large to cover the defect on the ileum, or its mesentery, made by cutting away the adhesion. The wall peritoneum defect, made by cutting away the flap can practically always be closed without difficulty by drawing the cut edges together. The ileum should be freed to the full extent of its mesentery, exactly to the ileo-cecal valve. The adhesions will be most frequently found in the immediate vicinity of the appendix. Here the appendix can be conveniently robbed of its peritoneum to cover the ileal defect. These peritoneal flaps for covering the ileal defects should always be cut, in freeing the ileum, leaving one side attached to the ileum. This, because the graft grows better and requires less sewing in place, but where this cannot be conveniently done, free peritoneal or omental grafts serve the purpose well.

These terminal ileal adhesions will assume every conceivable form and character. Only recently we operated on a man whose chief symptoms were intestinal pains after eating, and severe obstipation. We found the terminal ileum for a distance of about eight inches, beginning four inches above the ileo-cecal valve rolled on itself, one complete revolution as you would roll a map on its holder. This was unwound, and the peritoneal defect covered with a free omental graft, because it was too large to cover with peritoneum at hand. This man has been completely relieved of his obstipation and indigestion.

After these attentions to the ileum the cecum is relieved of its adhesions if deemed necessary by cutting it away from the abdominal wall and turning it upward and inward. This is seldom necessary, however, unless the appendix is imbedded behind the cecum, when it makes it much easier to remove the appendix. When doing this all peritoneal defects must be covered with peritoneal or omental grafts.

The appendix may now be removed, care being taken that the meso-appendix stump in no way pulls or interferes with the freedom of the ileum or its mesentery.

In operating on gangrenous and ruptured appendices, as well as those cases that should have been operated two days or a week earlier, these measures just considered can seldom be carried out. And it is in just such cases that post operative troubles are most apt to occur with the best surgeons. When cases are operated on in the first twenty-four hours, during which time all cases should be operated, all these details are quickly and easily carried out and they can generally be done even as late as forty-eight hours. Later than forty-eight hours these details can seldom be attended to.

In cases which require drainage, the drains should be placed to the outer side of the cecum, when expedient, to keep the drainage tract away from the terminal ileum, bcause dense adhesions of the ileum will result.

The bowels should always be moved early because early peristalsis so induced tends to prevent the formation of adhesions.

If these suggestions are always borne in mind and carried out where practicable we believe the results in the surgery of appendicitis will more nearly approach a practical perfection.

THE KANAVEL TUBE, A VALUABLE ADJUNCT IN THE AFTER-TREATMENT OF ABDOMINAL SURGERY.

BY

F. W. NOBLE, M. D., Tucumcari, N. M.

(Read before the 3rd Annual Meeting of the Medical and Surgical Association of the Southwest, El Paso, Texas, December 7, 1916.)

Some few years ago Rehfus devised a new stomach tube, that consisted of a heavy slotted egg-shaped ball connected with a flexible rubber tube of small caliber. This instrument was designed to avoid the discomforts of introducing the large calibered Ewald tube, and also aimed to furnish a tube that could be introduced into the stomach and remain there an indefinite time. By this Rehfus was able to make those fractional tests of the stomach contents, that have changed many of our former ideas of the physiology of the stomach and assisted us so materially in the diagnosis of stomach diseases, especially cancer of the stomach.

Some years ago I was greatly impressed by the wonderful effects of lavage in the hands of Dr. A. J. Ochsner, in stopping the pain of biliary colic and appendicitis and also with the great value of lavage in bringing about a decrease in the mortality. Dr. Ochsner effectually demonstrated that, if the stomach was kept empty allowing nothing at all by mouth, opiates were unnecessary in these painful conditions. Before Ochsner, Grosser passed a stomach tube through the nasal passages and let it remain in certain cases of vomiting.

In June of this year, I noticed that Dr. Kanavel, Assistant Professor of Surgery in Northwestern University, had seized upon the Rehfus tube as a splendid means to accomplish the results of Dr. Ochsner, without the discomfort of passing an Ewald tube and without the necessity of repeatedly passing a stomach tube. Dr. Kanavel, because in an unconscious patient the Rehfus tube could not be swallowed, devised a tube that was divided thirty inches from the metal ball and at this point was connected with another tube twenty-five inches long. To pass this tube, this connection was unscrewed and a stylet of piano wire with a small bulbous distal end was inserted into the distal portion of the tube in the manner of a stylet in a soft catheter, to furnish enough rigidity to pass the slender tube to the stomach. Next he found that in the regular metal ball of the Rehfus tube the slots were of such length that the stylet would pass out of the slots and so injure the oesophagus or stomach; so he replaced the Rehfus ball with one of his own design, consisting of holes and slots which prevented the escape of the stylet and he had a small depression made on

the inside of the metal ball to receive the end of the stylet. After introducing, the stylet is removed and the tube held in place by adhesive plaster to the chin and cheek of the patient, as we used to fasten the thread from an intubation tube.

The uses of this tube are evident. It will prevent acute dilatation of the stomach and be a valuable resource in the treatment of paralytic ileus, gastritis, toxemia and peritonitis. These and persistent vomiting can be treated by repeated washings at stated intervals. The lavage water may be medicated if necessary. I usually use a solution of sodium bicarbonate, except when using the tube for lavage the outer end is kept in a basin and covered with fluid. In patients from whom we are withholding everything by mouth, the patient may be given the satisfaction of a drink of water and this can be at once aspirated. After using the tube in a patient for a few days, the patient's absorption of liquid food may be tested for, by giving such food in small amounts, and if subsequent suction demonstrates proper absorption, then these amounts may be increased and thus feeding will be resumed at the earliest moment. Dr. Kanavel mentions a case of peritonitis which was apparently moribund. The tube was kept in the stomach of this patient four days and the patient did not vomit after the treatment was begun. Since June I have needed the Kanavel tube in several cases and I am crediting the Kanavel tube, as being the deciding factor in getting two of these cases well.

Case I.

Mrs. C. L. O., a housewife, referred to me by Doctor J. P. Boggs, entered Tucumcari Hospital on August 28th, 1916, suffering from a bullet wound, the bullet having entered the abdomen about five inches to the left of the navel and almost two inches below it, the direction of the bullet being backward and to the right. She had come to the Hospital in an automobile over twenty-seven miles of rough road. The abdomen was opened shortly after her arrival and seven perforations of the intestines found, two of them in the descending colon, the remainder in the smaller intestine, and occurring at widely scattered places. Several perforations of the mesentery had caused a plentiful hemorrhage. The mesentery was repaired and the bleeding stopped, the holes in the bowel were then sutured with silk. Before she left the table, the Kanavel tube was introduced and her stomach thoroughly washed. As soon as she reached her bed the Murphy drip was started by rectum. She complained of nausea and vomited a green fluid at seven next morning. Her stomach was then washed with soda solution and she at once expressed herself as feeling much better. The stomach was again washed at four p. m. and at eight p. m. and eight next morning and at four p. m. and at eight p. m. This lavage three times a day was continued until September 3rd at 10.00 p. m. and entirely prevented further vomiting, made the patient very comfortable after each lavage and seemed

always to be of use in helping the patient to pass flatus. Flatus was nearly always passed in quantity shortly after the stomach was washed.

Case II.

Mr. W. H. T., a rancher, aged 38, entered the Tucumcari Hospital October the 27th, 1916, complaining of soreness in the right lower quadrant of the abdomen. His family history was negative. He had had slow fever, measles, pertussis, and rheumatism in the left hip for three months, six years ago. His present pain began on Sunday, October 22nd, five days ago, and was intense Monday night. He vomited on Thursday night and Friday morning he had a sweat and was chilly. He was suffering from general peritonitis. An appendectomy was performed at ten p. m. and suppurative appendicitis found. After the operation his stomach was washed and the Murphy drip was started as soon as possible. He vomited at three-thirty in the morning, a clear fluid and complained of much pain at eleven a. m., and at twelve noon I introduced the Kanavel tube because of the vomiting and tympany and washed his stomach. He vomited once after this and he continued to expel green fluid through the tube at intervals. There was a paralytic ileus, which responded to the lavage, compound enemata and pituitrin in one C. C. doses at four hour intervals. The Kanavel tube was removed at eight p. m. on November 1st, 1916. The patient made a good recovery, although it was necessary to re-operate upon him during convalescence for a pelvic abscess, arising from the appendicitis about 3 weeks after the appendectomy.

Case III.

Mrs. W., a housewife aged 51 years, came to the Tucumcari Hospital on Nov. 12th, 1916, with a strangulated hernia, which had existed at least forty-five hours. She had repeated vomiting and severe cramping pains, when not under the influence of an opiate. A physician had chloroformed her and performed taxis under chloroform; but was unable to reduce the hernia. He only succeeded in most thoroughly mashing that strangulated bowel by his efforts, in fact the anesthetic enabled him to injure the bowel much more thoroughly than the patient would have permitted had she been awake. So soon as we could prepare the patient and ourselves, we did a herniotomy and found a gangrenous small intestine. This I dropped back into the abdomen and waited eight minutes and then re-examined it to note any change in regaining vitality. One gangrenous spot remained and I attached a silk thread to this part of the intestine to identify it later and dropped it back into the abdomen. Then I did a typical herniotomy. Next I entered the abdomen by means of a low median incision, brought up the damaged intestine and resected about six inches. Then the abdomen was closed except for a large rubber drain in the lower angle of the median wound. The patient's stomach was washed and the

Kanavel tube left in the stomach. She was also given 1 C. C. of pituitrin hypodermically at four hour intervals. Lavage was also carried out at four hour intervals and she had a brown fluid stool on the afternoon of the thirteenth. Her temperature was 99.2 and her pulse 80 on the fourteenth and she had passed quantities of flatus and had had three large brown colored stools. Everything appeared to be progressing favorably until the morning of the fifteenth, when the nurse came to me and said that while she was raising her up the patient complained of feeling very badly and that her pulse had gone up to 140. I saw her at once and saw that she was having a large embolus pass through her heart. Her relatives were summoned to the bedside and she passed away about four hours later, evidently from the embolus. The Kanavel tube in this last case did all we expected it to do and added greatly to the comfort and well being of the patient.

THE NOMENCLATURE OF TUBERCULOSIS.

BY

W. W. DILL, M. D., Albuquerque, N. M.

(Read before the Bernalillo County, New Mexico, Medical Society, February 21st, 1917.)

Phthisiology is as old as medicine itself, for consumption is spoken of in the books of Leviticus and Deuteronomy. Yet, as a science, its youth and vitality are shown by its shifting views and unsettled terminology. These last may be due partly to the polymorphism of the disease which is becoming better understood; and partly to the intellectual polymorphism of the medical profession—which can never be understood.

The Turban Schema for classification of Tbc. patients considers two factors: (1.) The amount of involvement and (2) its severity. As usual, there are three grades; one, two, and three. This scheme to be sure is quite arbitrary and anatomical, and has little prognostic value. But it has one great advantage. It side-steps an immense amount of criticism, by omitting descriptive terms as "incipient" and "advanced," also constitutional symptoms and complications. It speaks more pathologically than clinically.

The American Classification, that of the National Association for the Study and Prevention of Tb. and of the American Sanatorium Association, revised in 1913, aims to be more descriptive and helpful and is the best ever officially produced. However, it is apparently not yet so venerable and classic that it may not be touched by rude hands. Consequently, every author feels duty bound to take a whack at it. Perhaps it gets into difficulty mostly by trying to describe cases both clinically and pathologically at the same time. Besides speaking of the minimum amount of involvement of the lung, it attaches a descriptive title, such as "incipient"; and enumerates such clinical data as "slight or no constitutional symptoms, * * * * elevation of temperature, or acceleration of the pulse, * * * expectoration. Tubercle bacilli may or may not be present."

Perhaps it is this word "incipient" which has given the most offense. Yet how could we get along without it? It is euphonious and handy. Every patient who discovers he has phthisis likes to think, "It is incipient. I can be cured." So the popular literature says. And so the official classification used to say, until 1907 when it dropped the word "favorable" as prognosis of the first stage. But what is an incipient case? Incipient means beginning. In any given case of Tb., what do we know about how or when it began? We think most likely in childhood. The patient does not know. But all this is from the pathological point of view. Clinically, when the manifest disease or phthisis began is a very different matter.

The patient can tell usually when he began to be unwell. But he might have been incipient pathologically twenty years or more before being incipient clinically. So to be clear, we must distinguish between the whole Tbc. process beginning with the primary infection, when it was "incipient *tuberculosis*," and the manifestation of actual disease, usually years later, when it is "incipient *phthisis*." Fishberg, in his recent work on Pulmonary Tuberculosis constantly makes this distinction: The difference between the *infection* and the *disease*. In a personal communication, Dr. Pottenger says: " 'Incipient Tb.' should never be applied to early clinical Tb. in the lung * * * I speak of early Tb. of the lungs, or any other organ, not as incipient, but as 'metastatic infection.' I characterize that condition which we have been speaking of as 'incipient Tb.' as 'early clinical Tb.' meaning Tb. when it shows the earliest clinical symptoms." In his latest book on "Clinical Tuberculosis" which Pottenger has just published he insists upon these conceptions. What he calls "early clinical Tb." Fishberg has called "incipient phthisis." Both men avoid the term "incipient Tb." in a clinical sense. Dr. Geo. H. Evans of San Francisco has said, "It is inconsistent to plead for exact methods in diagnosis, based on a more accurate knowledge of the underlying pathology, and retain a nomenclature as misleading as the term 'incipiency' when applied to clinically demonstrable active Tb." (1.)

But, call the first stage what you will, what kind of cases belong to it? The official schema places acute cases in a class by themselves. Fishberg thinks that "Abortive Pulmonary Tb.," "Fibroid Phthisis," "Pulmonary Tb. in children" and "Phthisis in the Aged" also deserve separate classification. To chronic phthisis he describes only two stages, incipient and advanced. Perhaps he reasons that it is unction to the breast of a patient to know that he is incipient, so that should be retained; but it is damnation to find out he is far advanced, so that term should be dropped. Certainly the two advanced stages often merge into each other quite imperceptably. This author thinks that many people not at all sick, or those with collapse induration might have more signs and symptoms than those given for the first stage. He objects to lumping together the active, inactive, and abortive cases in the same stage. It seems to me questionable to use the term "early" as Ritter and others (2) advocate instead of "incipient" since that introduces the time element, while the first stage usually signifies a limited amount of involvement and disability which may continue more or less stationary for a long while just as the other stages may. To use "primary" or "grade I" as European authors do, would seem to avoid some of these difficulties. How should one classify a healed third stage lesion in one lung, with an active first stage lesion in the other? Clinically, first stage; pathologically, third stage? Take another case for illustration. A patient of mine who had been pursuing a benign fibroid course with hemoptyses but negative sputum for several years was assailed by the Bacillus of Friedlaender. Soon after, activity was increased and tubercle bacilli began to

appear in the sputum in large numbers. At once I felt that her status and future course had become considerably altered, which subsequent events proved. Yet she would have been classed in the second stage right along. This would tend to show that fibroid phthisis deserves separate classification. But to extend the subdivisions indefinitely, as some do, separating as varieties the arthritic, diabetic, nephritic, alcoholic, syphilitic, hemorrhagic, bronchitic, bronchiectatic, pleuritic, etc., would seem to introduce unnecessary complication. To speak of a pre-tuberculous stage of Tb. can only be a pathological misnomer and absurdity, to my mind.

Some say the first stage is earliest recognized by auscultation, some say by percussion. Some say if at all clinically recognizable it is no longer incipient. Some say if there are bacilli or râles, it is no longer incipient. The official classifications admit both to the first stage; and, amid the tumult and the strife, the official schema goes serenely on. One may take it or leave it.

Many question the validity of speaking of "cures" in Tb. At first, in classifying results, the National Association used the word "cured" without qualification. In 1912 the Committee on Nomenclature, moved by a burst of frankness, reported that "it is most difficult to say who is cured and when the cure is arrived at." Consequently patients have imbibed the idea that there is no cure for them. Perhaps in the pathologico-anatomical sense no cure does exist—implying restitutio ad integrum—any more than in small-pox. But surely we may speak of clinical cures a plenty, if we consider only abortive cases which have passed for severe colds, and also the lung scars found at necropsy in those who have died of something else —a very large proportion of all adults. Some have said Tb. is the most curable of all chronic diseases. Counting in osseous and glandular forms, there should be no doubt of this. However, in view of the relative quality of immunity and of the possibility of recurrence, it is well to be conservative and speak of "apparent cure" as we do, where there has been active phthisis. But patients should be given an explanation.

This brings us to the consideration of the word "active." In a recent book we read, "A larger proportion of active cases remain quiescent for one or two years." The author might have meant one of two things. Either, though clinically active, the cases remain stationary—that the processes of repair and destruction are evenly balanced. Or, though pathologically active and ulcerating, they are clinically and symptomatically quiescent. Here again is the difficulty in trying to talk clinically and pathologically at the same time without specifying. A case cannot be clinically active and clinically quiescent at the same time, any more than a patient may be dead and still smoking a cigar. A case may be more active, less active, progressive, regressive, or stationary. Pottenger says: "This term (active) is wrongly confined by most writers to cases which are showing clinical symptoms of the toxic group. By study of pathology, we know that the disease may be active over long periods of time and yet the patient be free from

toxic symptoms." Here he uses the word in a pathological sense. It might be questioned whether it *should* be used as a pathological term to signify infiltration, catarrh, ulceration, etc. If, as most authors do, we restrict the word to clinical uses, it should include not only toxic symptoms, such as fever, tachycardia, languor, etc.; but *all* clinical evidences, such as positive sputum, moist râles, hemoptysis, etc. A Tbc. patient presenting any of these symptoms or signs should be considered clinically "active." To be considered clinically "quiescent" all these should be absent, in my opinion. If the word "active" be used at all in a pathological sense, it should be "so nominated in the bond." The term "quiescent" is sometimes used to denote slightly lessened activity. If one were to say "less active" in such a case, no misunderstanding need arise.

Then it seems to me it would be well to distinguish between "latent" and "quiescent" and not use them interchangeably. Before a childhood infection has ever become manifest, we would speak of it as "latent." After an active case has become inactive we would speak of it as "quiescent." Before activity, latent; after activity, quiescent.

When patients are spitting more or less bloody sputum, how often do they dispute with the physician if they hear him call it a hemorrhage. "Hemorrhage" dosen't sound good to their esthetic ear. The medical dictionary defines hemorrhage as any escape of blood, even by diapedesis through intact vessel walls. (3.) But, for the peace of mind of the patient, which is part of the treatment at such a time, it would be better to call it hemoptysis or blood-spitting. Even the etymology of the words would favor that usage.

The words "tubercular" and "tuberculous" come to mind. As much as ten years ago the National Association plead with us to give up the word "tubercular" in relation to "lesions or conditions caused by the tubercle bacillus." But evidently many find it a task too hard for one lifetime, like the taste for whiskey. It comes too handy. Then it was understood that "hospitals" were for the segregation of far-advanced Tbc. patients, while "sanatoria" were for the more hopeful class. That injunction too is much honored in the breach.

The propaganda for the prevention of Tb. formerly worked the idea of infection so industriously that the result was the birth of that illegitimate child, phthisiophobia. To head this off will require a good deal of explanation to the laity. For instance, in Francine's book we read, (4): "It (Tb.) is not contagious in the ordinary acceptance of the term." On the other hand we read in the Von Rucks' recent book "Studies in Immunization against Tb." (p. 20.) "We do not hesitate to assert, that the protection of a nursling against Tb. infection is rarely possible in a family in which there is a person whose sputum contains tubercle bacilli, and never if this patient is concerned in the care of the infant. Even if the latter is absolutely isolated from all other rooms in the house, and is confined strictly to the nursery which is never entered by the Tbc. person * * * * *"

Also Hamburger mentions a case where exposure of an infant for only one hour was followed by infection of a malignant type. (5.) Children are born free from Tb., but the studies of Cornet, Epstein, Bollinger, Hutinel, Bernheim and many others make it clear that pathologic infection in children stands in direct relation to the amount of exposure they receive. (6.) But clinical disease depends much more on a very different condition, that of susceptibility or lowering of immunity. Under the age of two years, infection is so sure to be disastrous that too much care cannot be taken to avoid it. To leave a wider margin for safety, some say five years. At any rate, from about this time until puberty infection is most likely to be benign; and in about 90 per cent of children it seems inevitable. Therefore, if it is usually inevitable and benign, the main point in prophylaxis would be to prevent such influences as lower resistance to endogenic infection and breaking down after puberty. The question then arises: Can those already infected be re-infected or super-infected? What is the difference between these two terms? Fishberg says the difference depends upon whether the primary lesion has healed or not. If it has healed, renewed infection would be re-infection. If not healed, it would be placing one on top of the other, super-infection. Hamburger says that since anatomical healing does not take place in Tb. all renewed infection is super-infection. Now super-infection may be either exogenic or endogenic. Koch believed exogenic super-infection impossible. More recently Roemer, Hamburger, Much and others have shown how very difficult it is to super-infect with Tb., as it is also with syphilis. (7.) Most of us believe that only exceptionally, with massive doses and lowered resistance, does exogenic super-infection take place, and that nearly all secondary infection is endogenic and metastatic, the lighting up of a latent lesion. Pottenger says, "A person who has an infection already in his body is probably protected from all ordinary inoculation coming from without, as well as most inoculation coming from within." Much says, (8) "A Tbc. organism is not susceptible to, in fact it is immune against super-infection from without." Since about 90 per cent of adults are thus infected and so possessed of immunity, the practical bearing of these facts is enormous. Shall a Tbc. patient be considered an outcast, Should he be hounded from one workshop and boarding house to another? Should a Tb. sanatorium be considered a pest house? Should a laryngologist avoid treating a Tbc. throat? What about family relations where one of the family is sick? What about sputum disinfection and room disinfection, inefficient as they usually are? A thousand such questions in relation to phthisiogenesis could be disposed of in the light of these facts, if they are facts. The infant should be removed from infection absolutely; not so others. If these views of infection are substituted for the older ones in the public mind, phthisiophobia will take care of itself.

We have seen that Tb. is primarily a pathological term denoting the whole process caused by the tubercle bacillus from the time of its entry into the body until the body goes hence. But what about phthisis? McCrea has

said: "The word 'phthisis' has fully as many meanings as it has pronunciations, and what does a medical man understand when another speaks of phthisis?" (9.) Is it any active case, one with cavitation, or one much emaciated? Fishberg prefers to use it as a clinical term denoting an active case, one sick and in need of treatment, a consumptive. Ah! there is the word we have been trying to avoid. Consumptive. The sound is too sinister. Nobody likes it. But what other noun do we have to take its place? "Tbc. person" and "Tb. patient" seem clumsy. In sanatorium language, he is a T B. The Bulletin of the National Association while it was being published, had been using Tb. as the contraction for tuberculosis, and Tbc. for tuberculous. It has also been using occasionally the word "tuberculotic" for consumptive. As a substitute for "consumptive" Dr. Dorland in a personal communication could suggest only the two French words "tuberculotic" and "phthisic." Their form is suggestive of adjectives rather than nouns, and they seem not to have had much vogue as yet, though "tuberculotic" sounds rather good. But what a constipation of English does this betoken! In contrast, note what a perfect diarrhea of words we have in some places where they are not needed. Skiagraphy, skotography, skiography, radiography, electrography, electroskiography, roentography, new photography—all mean the same thing. Pour l'amour de Michael! Why can't we get an English word to fill that cavity? Help wanted! The best I can suggest are: tuberculant, tuberculote, and tuberculent. These are attempts to contract the two words "tuberculous patient." Now let someone else try.

In conclusion, I wish to emphasize the main point in my argument, which is that we should keep clinical conceptions and pathological conceptions out of the same pew, and then employ appropriate and unmistakable terms to express those ideas. Clearness of thinking and clearness of expression always make for definite progress in any science—in none more than in medicine.

(1) Journal A. M. A., Vol. LXVI No. 11, p. 833.
(2) Journal A. M. A., Vol. LXVI No. 8, p. 592.
(3) Practioner's Dictionary, Gould, 1916.
(4) Pulmonary Tuberculosis, Francine, 2nd Ed., p. 229.
(5) Pulmonary Tuberculosis, Fishberg, pp. 108 and 371.
(6) Studies in Immunization, Von Ruck, pp. 21 and 22.
(7) Pulmonary Tuberculosis, Fishberg, p. 107.
(8) Pulmonary Tuberculosis, Fishberg, p. 117.
(9) Journal A. M. A., Vol. LXV. No. 2, p. 137.

PELLAGRA IN THE RIO GRANDE VALLEY.

BY

W. F. WITTWER, M. D., Las Lunas, N. M.

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That the pellagra situation is grave in some of the Southern States is admitted. That it may develop a similar situation in New Mexico is probable and the likelihood of such a development demands serious consideration on the part of the sanitarians and populace.

Pellagra is an old disease and has been known in European countries for many years, especially in southern France, Spain and in Italy. It has always been considered a disease of southern climate. The disease has been quite generally brought to the attention of the medical profession of the U. S. during the last decade; however, it is believed that the disease has existed here for a long time though not so generally distributed and well known. It is quite probable that many of the U. S. soldiers who were confined in southern prisons during the Civil War where they were largely fed on cornbread and bacon, and reported in the mortality list under "chronic diarrhea" died of pellagra.

Unfortunately the registration area of the U. S. does not cover the territory that contains the major portion of deaths from pellagra. The registration area is practically north of the 36° north latitude and, pellagra being a disease of southern climate, is largely south of this line. Pellagra caused 1,015 deaths in the registration area of the U. S. in 1913 compared with 368 deaths in 1910. These figures were taken from the mortality statistics, Bureau of the Census. No doubt a much higher rate of increase existed in the Southern States. Pellagra is on the increase in New Mexico and no doubt will continue at a rapid rate of increase unless some precaution is taken whereby the disease may be held in check.

Clinical Observations.

The pellagrins on which this report is based are all native New Mexicans and belong to the poorer class. They were all patients who applied to me for treatment and all lived in the vicinity of Los Lunas, with the exception of one who came from a ranch in western Socorro County.

Pellagra in the early stages of the disease is not readily recognized by symptoms. It is impossible to make a positive diagnosis in incipient cases because there is no known specific causative factor, therefore the diagnosis must be made on clinical symptoms which in mild cases is always subject to debate, especially if the patient tends to recovery and does not

manifest the symptoms of a well developed case. In the U. S. Public Health Service the erythema, or skin leison, has been the leading and confirming diagnostic symptom. In the cases which I have seen the first symptom is the general debility and the patient complains of extreme weakness as the essential symptom. Of these patients only one had the erythema when he presented himself for treatment.

The following reports are somewhat typical: Mrs. M. S., widow, age 48, came to the office in June, 1915, for treatment of the erythema on the hands before she considered that she required any general treatment. Pellagra was not suspected and was not recognized. The erythema was slight and not accompanied by any other symptoms and soon disappeared and the patient did not return for treatment until November 10, complaining of disorders of the nervous system. At this time the erythema was not so called either by the patient or me. On December 1st she developed the gastro-intestinal symptoms, and on Dec. 20th she developed an erythema on the upper and inner surface of the right thigh and the adjacent vulva. From November 10th to December 20th there was no erythema on any part of the body. The patient was stripped and examined each week so there is not much likelihood that the erythema escaped our attention. The patient died about two weeks later with typical symptoms of the three essential lesions; viz., of the nervous system, of the gastro-intestinal tract and the erythema, accompanied by the constant and characteristic condition of muscular weakness.

Another patient, Mrs. P. C., age 50, applied for treatment July 8, 1915. She gave a history of having had the erythema on the hands during January, 1915. She had at all times during the course of the disease typical symptoms of pellagra with the exception of the erythema which was not present at any time while the patient was taking treatment, viz., from July 8th to September 4, 1915, when she died. Another patient, Mr. J. C., age 34, a day laborer on the state highway came to the office March 18, 1916, for treatment for diarrhea. This patient had a fully developed case of pellagra including the erythema on the hands, with a sharp line of demarkation which classed it with the so-called glove-like erythema. This patient is the only one who had an active erythema when he applied for treatment. He continued to grow steadily worse with involvement of the nervous system until he developed an acute mania the latter part of May and was then committed to the hospital for the insane where he died about two months later. Another patient, Mrs. T. A., age 50, whom I was called to see April 22, 1915, gave no history of erythema nor was any present during the time of treatment. It was a typical case of pellagra with the exception of the erythema. She died October 20, 1915.

The erythema when present is mild in character, generally subsiding in the course of a few weeks. It causes very little, if any, inconvenience to the patient, so that he does not apply for treatment for this condition and, I think, it generally escapes the patient's mind later on, so that when he is

asked about the erythema, he gives a negative history. After the erythema has subsided, the skin which was involved is somewhat contracted, indurated and slightly atrophied which gives it a wrinkled and somewhat glazed dry appearance, quite similar to the hand that has been sterilized in a carbolic acid solution strong enough to give a slight burn. The erythema when present is quite pathognomonic of pellagra.

Gastric Symptoms.

The gastric symptoms in the early stages of the disease are not pronounced. In the later stages, in cases with involvement of the nervous system, the tongue is quite red, slightly contracted and fissured, with small painful ulcerations. In cases with less involvement of the nervous system the tongue is large, flaccid and coated. In a well developed case there is anorexia, epigastric heat and slight pain, and in the later stages of the disease, a persistent diarrhea which, in most cases, shows a blood tinged stool.

Symptoms of the Nervous System.

The symptoms of the nervous system are quite manifest. An ataxia which is noticeable in the walk is quite characteristic. The patient can walk with the eyes closed, can likewise stoop with no disturbance but his regular gait shows a marked ataxia. Insomnia is nearly always a symptom. No pain. Formication is present in nearly all cases and is generally an early symptom. Most patients show mental incompetency, skin anaesthesia, melanchola, giddiness, vertigo, spasms, chilly sensations, ringing in the ears and similar minor symptoms.

I have given the symptoms quite carefully because a physician who has no occasion to suspect pellagra and probably, like myself, who had never recognized a case before may be sorely pressed for a diagnosis, which was my case, and, with all due respect to my able consultants, wish to say that my first two patients died before a diagnosis of pellagra was made. Neither of these two patients had any erythema during the time of treatment, nor was it suspected, nor was any such history solicited. In cases where there is no diarrhea, which includes practically all of the incipient cases, no fever, kidneys normal, pulse practically normal, lungs normal, patients able to answer favorably nearly all the questions on a life insurance examination blank, it is no easy matter to make a diagnosis unless the physician knows and suspects pellagra. One of my consultants insisted that one of the foregoing reported cases was not sick other than having hysteria, and he promised to have the patient well and walking in ten days. I need only add that she did not walk nor did she live another month. I wish to emphasize the fact that we failed in the diagnosis in the first two cases, not because the disease is difficult to diagnose, for the very reverse is the case, but because we failed to suspect pellagra.

Heredity.

Three of the reported patients were sisters and are of a family of six grown people. Two were fatal cases. The three had been living, each in her own home, in the same community for many years. With this exception the patients were not related.

Causes of Pellagra.

The causes of pellagra are not yet satisfactorily worked out. There is one class of workers who insist that it is an infectious disease with a direct communicable infective factor which is carried in the same manner that any other infection is conveyed. There are others who have not abandoned the spoiled corn theory. The vitamin theory is also advocated by many and is worthy of careful consideration. This theory likely is not the direct cause but no doubt is a contributing cause of no little importance in pellagra as well as in tuberculosis and other nutritional deficiency diseases where the vitality and natural resistance to the infection is sub-normal and where this sub-normal condition is an essential factor in the infection and subsequent development of the disease.

The most generally accepted theory for the cause of pellagra is that advanced by Joseph Goldberger, M. D. Surgeon, U. S. Public Health Service, which is carefully written for the Journal of the A. M. A. under date of Feb. 12, 1916, in which he concludes that it is not infectious nor contagious but that it is a food intoxication and that practically the only cause is a faulty diet, unbalanced in composition and deficient in proteins, in foods of an animal source and of the legumes, especially peas and beans. The patients in the foregoing report all conform to the Goldberger idea with the exception of the legumes. These patients have had a generous supply of beans in their diet. They have about the same sanitary conditions, housing, dirt, etc., that they have had for several generations, which leads me to believe that there is likely some climatic change that is a cause in introducing this disease in New Mexico. The history of the disease shows that it is a disease of hot and southern climates. Also the erythema seems to differ in different localities, which would indicate that solar heat and light rays probably play an important part in the etiology. It also appears that the erythema is a much more constant accompaniment of the disease and a much more marked symptom in the more southernly states, as Georgia and Mississippi than in New Mexico. I therefore believe that there are solar influences as a causative factor in the etiology of pellagra. It may be that there are some special heat or light rays that have a tendency to produce this condition when the diet is such that the natural resistence to this special intoxication is below the normal standard of resistance. On the contrary, it may be that there is a deficiency in certain light or heat waves which under normal conditions furnish the required resistance or immunity to this special nutritional toxemia.

Treatment.

Viewing this disease as a nutritional disorder, the main treatment has been directed to the diet, not only in prescribing a generous and well-balanced diet, but one rich in proteins of an animal source, such as fresh beef and mutton, eggs, milk and butter and codliver oil. To this has been added vegetables, fruits and fruit juices and cereals ad libitum with the exception of those that have too strong a laxative tendency. The proper care requires institutional treatment with a competent dietitian in charge. Medication offers but little assistance. When there is much involvement of the nervous system, the bromides act well. When the nervous symptoms will permit, stimulating treatment is indicated. Believing that climate or solar influence is a causative factor, a change of climate should be a part of the treatment. The patient should be sent from a hot to a colder climate and to a more northern latitude.

Prophylaxis.

If the generally accepted theory of the cause of pellagra is correct, our only prophylactic salvation is education. The profession should do all that is consistently possible. The daily press should be urged to help in publishing reports of pellagra and especially in reporting deaths, with comment, when due to this disease. The teachers in the public schools should be instructed in the cause and prevention of pellagra as well as the fatality of the disease.

Summary.

This report is based on clinical histories dating from September 1, 1915, to September 1, 1916. Of these patients eight have died. No patient that has once been confined to bed has recoverd. Of the fatal cases three were men, five women. Ages range from thirty-five to sixty-five. One of the eight gave a negative history regarding the erythema. No erythema was present while the patient was under treatment. All of the eight patients had the persistent diarrhea. All had the symptoms pertaining to the nervous system, although somewhat different as to degree. Four patients had melancholia of a marked type two of which later developed acute mania and were subsequently committed to the hospital for the insane. One of the patients committed to the hospital for the insane died before she was removed to that institution. Of the cases that were not fatal, two have a tendency to grow worse and will likely lead to fatalities within the next twelve months. Two patients are on the range herding sheep and have not been seen for two months. Prognosis for one of these two is not good. I have had during the time covered by this report six or more other cases that were mild in character, the patients not being confined to their rooms.

Conclusions.

1. The erythema is not so constant a symptom as in the more southern states. The diagnosis should have the benefit of the doubt in cases where there is no erythema present.

2. The diagnosis should be made early, before diarrhea is severe, for, in my experience, those cases have all proved fatal. If the treatment is to avail anything it must be instituted early in the course of pellagra.

3. This report conforms to the Goldberger theory in every particular, with the exception of proteins in legumes. These patients have had a liberal amount of beans, rich in proteins, in their diet at all time.

4. Certain light rays or other solar influences in hot climates are probable causes in the etiology of pellagra, or else, by virtue of an absence of some certain solar influence, the system is not able to neutralize the food toxema produced by the nutritional disturbance.

5. A change of climate should be added to the present system of treatment. The patient should be sent to a colder climate and a northern latitude.

6. When the etiology is thoroughly understood we may likely find that there is no one factor which is the cause of pellagra, but rather a resultant of forces or causes, including the present day theories, any two or more of which may be essential factors to the development of pellagra.

DISCUSSION.

Dr. W. G. Hope, Albuquerque:—To my mind this is one of the most important papers that I have heard read in the New Mexico Medical Society meetings. It indicates that our state is invaded by pellagra. Although we have had a few sporadic cases reported at former meetings, I think it was never more than one by one man and we have never considered that it is endemic in our state. The paper was very complete; I was very much pleased with it as a whole.

My own experience with pellagra has been confined to one case. About two years ago I was called to see a man, a Mexican, about 50 years of age, who came from a hundred miles west of town for treatment. I watched him for about two months. He had well marked symptoms of pellagra. I called in a few physicians here who saw him with me. He had an erythema, and had the melancholia and the general nervous symptoms. I watched him for about two months. My treatment had, I think, practically no effect on him. He returned to his home, a hundred miles west, in the mountains, and died a couple of weeks after his return.

As for the etiology of the disease, after reading Goldberger's experiments, published in the Journal of the American Medical Associatoin some months ago, I reported my case to the local county medical society and had occasion at that time to look up the literature to some extent. At about the time I was getting my paper up, the American Pellagra Association was meeting in some town in Carolina and I wrote there to the secretary of that association, who sent me some very valuable literature on the subject. At about that time Goldberger's paper came out as a bulletin—it was issued as a Government bulletin. I followed his experiments in detail and at the time I had absolutely no doubt that his conclusions were correct. His treatment, etc., was simply to give a well-balanced diet list. He found most of his cases in the prisons of the southern states and he experimented for some months in the prisons of Albama and Mississippi. His investigations convinced me thoroughly that his theory was correct and that the etiology

was due to an ill-balanced diet. As the Doctor told you, he treated his patients and cured a great many of them by simply changing the diet, giving them more meat and a generally well-balanced, nourishing diet.

As we all know, this disease appears among the poor and among people who are poorly nourished. My patient was a poor peon Mexican and his diet had been pretty much bread made from corn. All of these cases, if you will notice, are reported from among the lower strata of society, from people whose diet is markedly ill-balanced. I was very much pleased with the paper.

Dr. E. L. Ward, Santa Fe:—I would like to emphasize a few points brought out in the paper.

In regard to the symptoms, you very often get the mental symptoms of pellagra before you get any rash. For instance, I had one case who developed melancholia with delusions of persecution, and it was a month or so before she developed any rash. Also, this rash seems to be influenced by the light rays, as, for instance, an American will probably have it more on the hands, whereas a native who goes barefoot to a great extent will have it both on the hands and the feet.

In the treatment, I have used largely what I call a tbc. treatment, with the exception that I do not give them much light because the light always makes the erythema worse.

In regard to the increase of pellagra, I often wonder whether it is so much increase in pellagra as it is increase in our knowledge of it. It seems to me that there is a good deal of room for discussion as to whether we are not getting awakened to the cases or whether the disease is really increasing.

Dr. J. W. Kinsinger, Roswell:—My first case of pellagra I saw 21 years ago, in January or February. The case then presented some nervous symptoms, especially gastric disturbances which continued up to the time of her death and I think she has been dead probably four or five years. It was not recognized as pellagra until the severe mental symptoms developed with a diarrhea and with mania. We were far from the asylum and the case was never sent to the asylum. She was the wife of a merchant and had plenty of vegetables but I think they used very little fresh meat, principally pork, fresh pork, however, at intervals, and a great deal of bacon. They were cornbread eaters; that is, they had cornbread more often than other bread. But this case continued with erythema of the hands only each spring until the last year or perhaps less, when the erythema became more extensive. She had the symmetrical erythema of the hands, which extended halfway up the arms. In the latter part of the course of the disease, the erythema was extreme, with cracked skin and some infections and pus, especially between the fingers. At that time three or four physicians saw her, and the disease was then recognized.

I think that I lost several patients who died without the disease being recognized, Mexicans, and with no history of erythema. However, the clinical history was not sufficient for recognition because they were not recognized as pellagrous until we knew what it was, which has been, now, for a number of years.

At the present time I have a case, a Mexican woman. The family is fairly well off, farmers. She had the disease for nearly a year and of course, has now the typical symptoms of pellagra including mental disturbance, gastric, etc., with absence of erythema.

We have had reported at our county society meetings seven or eight cases of pellagra in the last five years. One of our physicians, who is probably present, has one now and is treating it, a white person; and our experience, with the exception of this one merchant's wife, has been that the cases occur among the poorer classes of people. I believe, too, that all our white cases have had the erythema after they have reported to a physician for treatment. The patients have ranged in age from that of 18 months to 72 years. The woman of 72, a white woman, was the mother of the merchant's wife, and died two or three years ago. The other cases were sporadic and the greater number of our patients have died. The majority of our cases have been residents of west and middle Texas. One woman, the mother of four children, who had always been in good health, had nothing but gastric and nervous symptoms, which were not relieved. The husband took his family to his old home in Texas and came back in less than a year with the wife buried and gave history of typical symptoms of erythema. This case, however, was recognized and that has been some years ago, six or seven years ago.

So, in conclusion, I would say that pellagra is not as new in our state as we imagine, but we have had cases which, however, have escaped recognition, for the last 21 years.

Dr. G. K. Angle, Albuquerque:—I enjoyed the paper very much. It was the kind of a paper that is practical and treats of something that comes up to the physicians in New Mexico every day.

It seems to me that if I drew any conclusion—I never saw a case of pellagra in my life and I am not familiar with the literature except that I have a hazy recollection of some time not long ago having read an article on pellagra— at any rate, the symptoms that the essayist gives and the pathology that he gives would indicate a central poison and a poison that had a selective affinity for the nervous system. It is mighty hard to believe that low diet alone would be sufficient to produce the symptoms that the Doctor gives for pellagra; but, at any rate, it is evident that some poison has gotten into the system which has a selective affinity for the nervous system. One man—I do not recall his name—working along that line, I believe injected thyroid extract into the spinal fluid. I am not certain about that, it is some time since I read of it, but to me that way of looking at it appealed rather strongly.

Dr. R. E. McBride, Las Cruces:—Just to keep the record clear is the only excuse I have for getting up. The first cases of pellagra that I remember officially reported from New Mexico were reported by Dr. C. F. Beeson, of Roswell. These cases were reported from the Rio Pecos Valley, and, as Dr. Kinsinger said, were mostly Mexicans coming from Texas. The first cases reported from the Rio Grande Valley were reported by Dr. R. E. McBride, of Las Cruces, in 1914, at the Southwest Medical and Surgical Association at its annual meeting. That report was afterwards published in the transactions of that Society, also later in the New Mexico Medical Society Journal, and it recorded in a very crude and elementary way the history of three cases. Since that time I have had six or seven more, all natives, all born in New Mexico, five of them born in Dona Ana County.

I do not know why they have pellagra. Like Mr. Cleveland's Venezuelan proposition, it is a condition that we have to combat, never mind why. The theory right now is that it is due to deficiency of protein; but to my mind the point is not so much what the cause of it is, whether it be an infectious agent, whether it come from some of the products of spoiled corn, whether it be due to some solar influence, or whether Goldberger is right in his deficiency proteid theory. The fact is that we have it and we have to meet it. Our state asylum has patients who are pellagrous. We sent a case up from Dona Ana County with all the symptoms of a homicidal mania and absolutely no other symptoms. It was diagnosed as pellagrous insanity. The man died within a short time. I am not prepared to say that it was not; I am not prepared to say that it was.

The cases that I have seen have not been confined to the native race. I saw one negro woman, a negro woman who was born in New Mexico and who had lived for the most part in Las Cruces, die of pellagra with all of the terminal symptoms. She was in the terminal stage when I saw her; I was sent there as a county official, with a view to having her committed to an insane asylum. We did not commit her because she was dying, and she did die in a few days. Another case was a young American woman of the better class, who came from somewhere in southwestern Texas, down about San Antonio. The only symptoms she had were just a little bit of a suspicious eruption on the exposed surfaces of the arms. The other cases have all been Mexicans and have ranged from very simple primary lesions to the terminal condition.

I am not prepared to stand up as an authority on pellagra, but I do believe that we ought to be a little more careful in our diagnosis.

As to treatment, of course, since Goldberger made his report from his experiments in Mississippi, experiments which, by the way, are particularly interesting whether their conclusions be correct or not, we watch the diet a little more carefully than we did before. But the thing that has given me the most satisfaction and the thing that has made me glad to see my patients out on the street later on, is to lock them up in a dark room, take them out of the sunlight absolutely, do not let them know when it is daylight at all, and if they are not too far gone—I fill them up with the hydrobromide of quinine and give them an injection of five grains of cacodylate of soda and every day if they are not too far gone it is wonderful to note the rapidity with which the symptoms clear up.

Now most of my cases—that is, those in the initial stages—have remained clear over one spring period and so far over this fall period. Whether they are cured or not, I would not want to say, but they are better. One of the stable boys is able to do his work. In that report of mine at El Paso, it so happens that one of the cases I reported was a Sister, a nun who had been very fond of corn all of her life and when she could not get the fresh article she ate the canned articles; there was scarcely a day went by that she did not have corn. Of course, in those days that

was rather suspicious; but, on the other hand, here was the stable boy who cleaned the stalls in a public livery stable and there was sufficient proof that the stable fly had something to do with it. Then there was a young woman of about 22 or 23, whose house was right on a sandhill, the winds had drifted the sand up there; and it was reasonable to suppose that she might have gotten her case from the sand flea. The point is that we do not know what it came from.

In conclusion, I just want to call attention to what appears to me to be the similarity existing between the skin lesions of pellagra and the skin lesions that we see so often in artificially fed babies, babies anywhere from two months or three months up to two or three years. We see them very frequently with this eruption all over the hands and all over the face. I throw that out of simply as a suggestion, the possibility that there may be some relationship between the faulty and deficient nutrition in these youngsers and the causative agency in pellagra.

Dr. H. V. Fall, Roswell:—I would like just to accentuate the remarks of Dr. McBride in which he referred to the necessity of making a correct diagnosis in these cases. I have had the pleasure of seeing several cases of pellagra at Roswell, and I well remember one to whom I was called about three years ago to see in consultation. I found a lady of about 40 years of age. She had mental symptoms that were suggestive of this condition, she had symmetrical skin lesions that were typical in appearance, she had the abdominal disturbance that characterizes the condition, and the case was so clear that I made a positive diagnosis of pellagra. That has been three years ago and I have long since been dismissed from the case. The woman has not, to my knowledge, had a recurrence of the skin lesions. She is apparently in better health than she was before that time and I do not think she has had any treatment at all. I either made a mistake in diagnosis, when the symptoms all pointed to pellagra, and she never had pellagra, or she recovered, and I do not know today which is the case.

I do know this: That where we have a little outbreak of pellagra we are liable to get a little pellagra-phobia and in that way come to make diagnosis of pellagra in cases that are not pellagra. I have seen that in one more instance down there. So I think we should be a little more careful in making the diagnosis, because it is a very distressing diagnosis indeed to make to a patient and one that should not be made erroneously.

Dr. Wittwer, closing:—I have very little more to add, but I should like to emphysize the point that a gentleman has made here, which is, that the diagnosis is of great importance, because our consensus of opinion has been that very few of these patients recover. As I stated in my paper, none of my patients ever confined to bed recovered. Now I have many cases that have not been reported. I had one case with slight ulceration of the skin in numerous places, the general weakness and debility and a few of the gastric symptoms and nothing else. However, it is not possible to make a diagnosis of pellagra in that case. Also I have other cases where I have diagnosed pellagra that are now recovering and going back to work; for instance, a man who was working as a section hand on the railroad track and was laid off for six months and is now back at work. Though he was unable to work from weakness, he had only insomina, slight anorexia. I believe myself that that man had a mild form of pellagra. If it were a mild form of pellagra, the man is not cured, he is only an arrested case which probably will recur within a year or so.

Then I would like to emphasize the fact that, while it has not been generally recognized and reported, there is no doubt in my mind that it is increasing in New Mexico. I have lived in one community and my practice has been almost exclusively among the natives. However, I have checked my diagnosis by having consultation from Albuquerque and from Belen and all the physicians in the surrounding neighborhood. None recognized the first three. The first case that I recognized was one where the patient had been in in June and came back in December complaining of nervous symptoms, with no erythema until about the 20th day of December, when it appeared on the inner side of the thigh and the forearm, which suggested pellagra to me. I went back, read up on the subject, and it was a typical case, no symptom missing. However, we may have had a number of other cases previously and, as the Government report states, it is quite generally conceded that the Government Indians have had pellagra for many years. Also, as I stated in this paper, it is now believed that many of the men held in southern prisons during the Civil War had pellagra.

ACUTE CATARRHAL JAUNDICE IN CHILDHOOD.

BY

J. A. RAWLINGS, M. D., El Paso, Texas.

(Read before the El Paso County Medical Society, November 20th, 1916.)

This is not a very common disease in childhood, but I was led to discuss this subject before you because of a series of seven cases occurring in my private and dispensary work during the past summer and fall.

The etiology of this disease is not very clear, but like most of the inflammatory conditions of the gall bladder and ducts occurring in older persons, it is thought to be due to infectious agents. No single agent can be named, but several bacteria have been suspected and Ratchford speaks particularly of the influenza germ.

The infection many times starts in the duodenum, and is carried up into the bile ducts which in turn become more or less obstructed, thus damming up the bile and causing its absorption into the system, showing in the conjunctivae and skin, and giving the urine its foamy appearance and yellow color.

The disease occurs most commonly between the ages of two and five. It sometimes occurs in such a manner that it simulates an epidemic, two to three cases occurring in the same family, or several in one neighborhood. It may occur alike in the well or poorly nourished. These symptoms are quite uniform in my experience, and though not characteristic at the beginning, soon become so, so that one does not usually suspect anything worse than acute indigestion until the mother mentions the fact that the urine is yellow or the stools are gray, or the skin and eyes are found to be yellow.

The early symptoms are chiefly gastric, loss of appetite, with nausea and vomiting. Constipation is the rule. The nausea and vomiting are rather persistent and the child complains of more or less pain in the region of the umbilicus. This pain is persistent, but as a rule is not severe, occasionally, however, I have had to resort to an opiate (paregoric) for its relief.

There is usually some fever, but it does not range high, rarely going to 103°. The child is nervous and irritable, and if old enough will complain of headache. These symptoms of fever, general discomfort, nausea and vomiting will continue for from three to five days, then it will be noticed that the skin and conjunctiva are becoming yellow, and that the urine is foamy and saffron in color, and the stools are grayish. These latter symp-

toms confirm the diagnosis, and increase in severity for three to five days longer, when they remain stationary for a week or more, then gradually subside.

The liver is usually enlarged, and may be felt from two to three finger breadths below the costal margin. Many times itching is present, but in not so pronounced a symptom, as in adult life.

Two or three things have impressed me as being helpful in making an early diagnosis; particular attention should be given to an examination of the stools and urine when a child past two years has, what appears to be, a stubborn spell of indigestion, for by examining urine and feces one will be able to predict that jaundice is impending, and thus be able to place the child on proper treatment, and at the same time improve his standing with the family. Three diseases in particular may be confused with this trouble though some others may have some symptoms in common. These are, recurrent vomiting, acute gastric indigestion, and appendicitis. These have many symptoms in common with catarrhal jaundice, as nausea, vomiting, pain, and fever, in the early stages, but the appearance of the gray stools, yellow, foamy urine, and yellow eyes and skin, clear up the diagnosis, but until these appear, one is many times in doubt, hence the importance of an early examination of feces and urine. Then again, recurrent vomiting has very little fever, and the pain in appendicitis is more localized and the liver is not enlarged.

As indicated already, the course of the disease is from sixteen to twenty-five days, the acute symptoms lasting from seven to ten days. After this time the appetite returns and the child begins to take more interest in life, but the discoloration of skin and eyes remains for two or three weeks longer.

The disease is rarely serious or fatal, and is so uniform in its symptoms and course that, as Ratchford says, it gives one the impression of a self-limited infectious disease.

Treatment.

Kirby and one or two other authors deprecate the general custom of giving too much calomel in this disease, claiming it aggravates rather than benefits the inflammation.

During the vomiting stage, say for twenty-four to thirty-six hours, it is best to stop all food, and give an initial dose of calomel, but stop here with the calomel. If a further laxative condition of the bowels is desired, give rhubarb and soda. In fact, plain soda water, one teaspoonful of bicarbonate to a glass of water is an excellent thing to give during the stage of nausea and vomiting. As a digestive and tonic, dilute hydrochloric acid and tincture of nux-vomica act well.

Attention to diet is most important, not only during the attack but for some time after.

As recommended before, no food should be given during the first twenty-four to forty-eight hours, then skimmed milk, buttermilk, stale bread, and cereals may be given. Fats, sweets, and rich food must be avoided.

Bile is necessary to the digestion of meats and fats, hence they should not be given until the flow of bile has been re-established.

DISCUSSION:

Dr. Werley:—He suggested the use of salicylates and belladonna in the treatment of this condition. The salicylates are supposed to have some liquefying effect upon bile.

Major Craige likened it to Weil's disease, which has been found to be due to a spirillum or spirocheta. He asked that the members of the society permit him to look for the spirocheta in the blood of sick children, if they had the opportunity.

Dr. Thompson:—One of the best signs of an impending jaundice is the lusterless condition of the hair just preceeding the attack and before the jaundice sets in. The abominable odor of the stool was not sufficiently stressed by the essayist.

Dr. Hugh White:—In the several years of my practice, I have never seen a case of this jaundice until the last few months when I have seen four.

Dr. McNeil:—I believe that the condition is very closely related to acute indigestion and usually give sodium phosphate with very good results.

Dr. Gallagher:—I would like to suggest the use of urotropin in this condition. It is not the only drug to be used. The salicylates have a very fine place, but I believe that the addition of urotropin will hasten the recovery of all these case very much.

HAY FEVER IN THE SOUTHWEST.

BY

E. R. CARPENTER, M. D., El Paso, Texas

(Read before El Paso County Medical Society, November 20th, 1916.)

Hay fever, or hyperesthetic rhinitis, was first accurately described by Bostock in 1819, although other writers had mentioned the disease long before that time. Elliotson in 1839, and Blackley in 1873 claimed the disease to be caused by the pollen of certain plants and grasses. Dunbar in Germany, and other investigators elsewhere, have verified the pollen theory and have added greatly to our present knowledge concerning this trouble.

Lenox Brown in his admirable work on the nose and throat, states three factors are necessary for the development of hay fever:

1. "A predisposing neurotic idiosynacracy, with debility of vaso motor control.

2. "A resulting chronic hyperemia of the vascular tissues, and hyperesthesia of the nerve endings of the nasal passages.

3. "An exciting agent which varies with the individual and locality. It may be the pollen of a grass, of a rose or of other flowers; or it may be certain noxious conditions of the atmosphere which are peculiar to certain seasons of the year, and certain localities and independent of any vegetable particles." True hay fever he attributes to pollen, pseudo hay fever to other exciting causes.

Dunbar in 1892 collected pollen from certain grains and flowers which he preserved, and with this material he succeeded in bringing on typical attacks in his hay fever patients at any time during the winter, while the experiment was entirely inert in people not susceptible to the disease during the hay fever season. With the same pollen extracts he injected horses and produced a serum, which when applied locally in the nose would neutralize the pollen extract, thus aborting the attack. He was also able to inject the antitoxin in the susceptible patients and prevent the customary periodic appearance of hay fever. Dunbar's treatment has been tried all over the world with varying success, some writers claim good results from its use, while others are not at all enthusiastic about it.

Since some patients are susceptible to only a certain pollen, it stands to reason the antitoxin from that pollen alone would be effective, and that the *shot gun* antitoxin so widely advertised would not cover the whole field in pollen therapy. Could we determine the exact pollen in all cases and could we eliminate the cases not due to pollen, the treatment of hay fever would be greatly simplified.

I believe Lenox Brown is right when he says: "The exciting agent may be certain noxious conditions of the atmosphere which are peculiar to certain seasons of the year, and to certain localities and are independent of any vegetable particles." Here in the Southwest we see a great many cases each year, and some at all times of the year. However, the majority of cases begin in May and June. At this time alfalfa and a few flowers are in bloom in certain communities, while in other distant communities there is hardly a vestige of green vegetation anywhere around. Yet hay faver occurs in equally as high a percentage in one community as in the others. practically all these patients obtain immediate relief by going to California, where alfalfa and almost every plant and flower of this section can be found growing luxuriantly.

The dust and wind cannot be an irritating factor in this country, as hay fever is less prevalent here during the windy season, February and March, than any other season. An usually high percentage of the trainmen and passengers traveling in and out of El Paso on the Rock Island trains are subject to typical attacks of hay fever while going through Kansas in the spring and summer. This is due, no doubt, to the pollen which is abundant there at that time—these cases are identical to our home cases.

Unlike many sections, hay fever here is not troublesome as a rule in the autumn, especially is this true with the new cases. After two or three years of recurrence, many patients continue to suffer the year round owing to chronic hyperplastic changes in the turbinates and to the formations of polyps in the upper part of the nose. However, at least ninety per cent of this class have some abnormality of the nasal passages, as unduly small nares, deviated septums, large spurs, or the middle turbinate pressing against the septum. These patients are readily relieved by correcting the nasal deformities and removing the hyperplastic tissue from the interior turbinate. As a rule, they have no recurrence of the hay fever. In this class the sensitive areas in the nose are destroyed, the neurotic element and the causative factor, whatever it may be, remaining unchanged. Antitoxin has been a disappointment to me in treating this disease, and unless it were produced by the use of alfalfa pollen, and from the wild flowers that occasionally bloom in May, its value could not be determined satisfactorily.

The typical uncomplicated cases in otherwise healthy individuals, are the most difficult to treat, the complete occlusion of the nose, the intensely itching eyes, the uncontrollable paroxysms of sneezing, the excessive secretion from the nose, the burning, dry, parched sensation of the palate, tongue, and pharynx, and the general discomfort may continue for days and nights without relief. These symptoms may disappear as suddenly as they came on, only to be repeated in a short time. Local treatment in this class is often of but little service, the patient is hyperesthetic and does not respond well to medication; at times cocaine, adrenalin and the opiates give temporary rest, while nasal irrigations may be useful. Trichloracetic acid applied to the lower turbinates will often prevent a recurrence. Internal

administration of acids and alkalies has not been of any marked value in my experience. I have not attempted immunization with pollen extract, as the experience of others along this line has not been very encouraging, and I do not know the pollen to use in this community.

Every case of apparently true hay fever in this section should be closely observed, by the attending physician. He should study the condition under which the patient is living, including the exact time of onset, whether at the patient's own home or elsewhere, and the character of the flowering vegetation in the neighborhood. He should take into consideration the direction of the prevailing wind, the temperature and whether or not the trouble is more frequently met with during a wet spring than when it is dry, as is usually the case in this community.

It is a well established fact that the actinic or white rays of the sun produce a hypersthetic rhinitis in some people while in mid ocean, and that certain individuals are unusually susceptible to an erythema of the skin from exposure to the sun's rays. As stated, hay fever is a very frequent disease in this semi-desert country, and makes its appearance at the time of year when the sun's rays are brightest, when the temperature is climbing upward and when vegetation is scarce, unless it be in certain small areas under irrigation. Practically all my patients have had their first attacks in this climate, although many of them previously lived in Kansas, Missouri, Illinois, and other states where pollen hay fever prevails. Almost invariably, patients coming here from the above states with hay fever are soon cured of the disease.

From a careful study of "hay fever" in the Southwest during the last eight or ten years, I strongly believe the sun's rays and the characteristically dry heat usually met with in May and June, are the irritants chiefly responsible for the trouble in this section. No doubt pollen is a factor to be considered, and when an antitoxin has been made from our local vegetation, better results will follow in a few selected cases.

I now have a series of hay fever patients under observation, who are to be tested during the winter and spring in a hot dry room, using intensified rays of the sun on the face and in the nose. I shall also have them experiment with red, green and other dark colored wool cotton worn in the nose. I have taken up the question with Park Davis & Co. of having an antitoxin made from alfalfa pollen, and from the yellow flowers that some times bloom on the mesa in the springtime.

When we have determined the chief irritant peculiar to this part of the country, and can offer a fairly satisfactory remedy, we will have bestowed a great blessing on this section of the country, for at times there are thousands of people here afflicted with this troublesome disease, which interferes materially with business, makes life miserable, and each season drives hundreds from our immediate community—some of them never return.

Discussion of Dr. Carpenter's paper:—Dr. Detwiler, Dr. Stark and Dr. Worley advocated the use of Calcii Chlorid, from the use of which they had secured good results. Dr. W. R. Smith claimed that washing out of the lachrymal sac with solution of boric or weak copper sulphate relieves the symptoms very quickly. Major C. A. Neal, of Cincinnati, drew attention to the fact that dry manure blown around might be an etiological factor. Capt. F. Kramer said that in 3000 cases which had passed through the Base Hospital at Fort Bliss, he had not noticed a case diagnosed as hay fever. Dr. H. Thompson and Dr. T. W. Grace drew attention to the fact that the disease apparently did not exist among negroes, Mexicans and Indians.

PUBLIC HEALTH ORGANIZATION.

BY

Senior Surgeon C. C. PIERCE, U. S. Public Health Service, 111 New Montgomery St., San Francisco, California.

(Read at the Fifth Annual Meeting of Arizona State, County and City Health Officers, April 24, 1916, Phoenix, Arizona.)

For the past several years there has been developing what might be called "the public health movement," in which all classes of citizens are participating to an extent that would have been considered remarkable twenty years ago. This has been due largely, to the discoveries that have been made by research workers relative to the causes of disease.

This has given a scientific basis upon which sanitary organizations could work, and has reduced the application of health requirements to a comparatively simple form, removing many of the severe restrictions formerly imposed by quarantine when the exact object of the measures taken was problematical.

This change in sentiment of the general public has been paralleled by improved methods of administration by State and Local Boards of Health. An effort has been made and successfully carried out by many States to completely reorganize their Boards of Health, and thus to bring their work into harmonious relationship with that of other States, and with the health work of the National Government.

The changes have also resulted in increased efficiency, in that the real object of sanitary work, prevention of disease, has occurred, and is proven by the reduction in the number of deaths resulting from most of the preventable diseases.

The National Government participates in general public health work to a greater extent than is usually realized..

The Annual Conference, called by the Surgeon General of the United States Public Health Service, of representatives of all the State Boards of Health, has been of particular value in developing a spirit of co-operation and in deciding questions of administrative policy.

Resulting from this desire to co-operate, and to develop efficiency, systematic studies of public health organization and administration have been made by experts of the United States Public Health Service, at the request of health authorities in the following States: Illinois, Kansas, Massachusettes, Minnesota, Washington, West Virginia, North Dakota, and Nevada; and in the cities of Chicago, Baltimore, Toledo, St. Joseph,

Mo., Richmond, Ind., and Bowling Green, Ky. As a result of these studies, recommendations have been made and followed, increasing the efficiency of the Health Departments in a satisfactory manner.

This work has also shown that two important requirements must be met, in order to do good sanitary work:

1. Properly qualified, full time, Health Officers must be provided for every community.

2. Appropriations must be secured that are large enough to pay for efficient health work.

To supply the first need, many educational institutions are now preparing to meet the future demand for trained Health Officers. Courses of instruction in Public Health have been established at Harvard, Massachusettes Institute of Technology, and the State Universities of California, Michigan, New York, Pennsylvania, and Wisconsin.

Sufficient funds can only be secured by the united efforts of those interested in each community. "Those interested" includes a large number of persons every year, for business men are beginning to realize that money spent for health is an investment. At least 2 per cent of the public revenues of the State should be expended for health work, and under proper administration this expenditure can be made to show a large profit, in money actually saved by members of the community through avoidance of sickness, and in increased efficiency and prosperity.

In order to consider just what is necessary to meet the requirements of public health work in the State of Arizona, let us first outline at least part of the work that should be carried out under the supervision of the State Department of Health, and then consider how this can best be done.

REGULATIONS AND STATISTICS.

There are now in most States, a tremendous number of Laws relating more or less directly to protection of public health.

Often these are administered under different Departments of the State Government. All such regulations should be correlated into one general Act, and everything relating to health work placed under the direction of the State Department of Health. This Department, working through its local and District Health Officers, and affiliated organizations, such as County and Municipal Boards of Health should exercise general control of every phase of sanitary work.

It is, of course, impracticable to here enumerate all the necessary regulations, but a few must be mentioned.

An accurate record of all births, deaths, and marriages is essential. Not only should physicians be required to report births and deaths, but those persons having knowledge of a birth or death where a physician was not in attendance should be required to make a report. Another important branch of vital statistics is morbidity reports.

The United States Public Health Service has framed a "Model Bill" for the notification of communicable diseases, and a standard notification card has been approved by the Conference of State and Territorial Boards of Health. On this card are listed more than 30 notifiable diseases. This system should be enforced, for no Health Department can effectively prevent or control disease without accurate knowledge of when, where, and under what circumstances cases occur.

SANITARY ENGINEERING.

This is a most important division of the Department of Health, and in States where the population is small but growing, its early establishment will result in tremendous saving, for the reason that water and sewage systems will be installed properly at first, and with future needs in mind. Plants built, under proper supervision, will not have to be condemned and changed later, when large centers of population make these problems more complicated. Divisions of the Engineering Department's work would be as follows:

Water Supply. State control of local water supplies should be under the Department of Health, as water from infected sources gives rise to epidemics of disease. No local supply, either from wells or streams should be authorized until a sanitary survey had been made of the proposed water shed. In case of supplies already established an examination should be made to determine the purity of the water—or its harmfulness.

The Engineering Department can give advice for corrective measures when impure water is found. In connection with water supply, irrigation projects, hydro-electric plants, and other water collections for commercial purposes would receive attention to prevent mosquito breeding as a result of their activities.

Sewage Disposal. Disposal of sewage of cities and towns and of human excreta in unsewered localities should receive attention. No community has the moral right, nor should it have the legal right, to discharge untreated sewage into a stream which may be used as the source of water for domestic purposes. Disposal of trade wastes would also be under this Department, as well as privy disposal of excreta in such manner as to avoid soil pollution.

Garbage Collection and Disposal. This subject, likewise, is one for the Sanitary Engineer. Proper collection and disposal of garbage promotes public health by rendering fly breeding less likely, and removing the attraction for flies near houses; by acting to starve out the rat population, thus making bubonic plague not likely to spread; and by avoiding nuisances requiring abatement.

Building Regulations. Most of this work would be under Municipal control, but in the case of State Buildings, schools in the rural districts, buildings at mining camps, and such locations the State Sanitary Engineer would have control, as well as being an advisor to Municipal officers. Regulations regarding housing, lighting, air space, ventilation, overcrowding, plumbing, and rat proof construction, screening when necessary; location of stables and outbuildings, all have an important bearing on public health. Requirements for the construction of stables, dairies, slaughter houses, factories, etc., should be enforced by the Sanitary Engineer.

Control of Communicable Diseases.

When notifiable diseases are reported the Epidemiologist of the Department of Health would when necessary mak an investigation to determine the origin of the disease, and to direct the precautionary measures that should be taken.

Requirements for the care of the case to prevent spread; such quarantine procedure as is outlined by regulations, and disinfection, should be carried out under the direction of an employee of this division, of the Health Department.

Physicians attending cases should follow directions of the Department of Health, and not be made responsible for establishing and maintaining quarantine, except as an initial precaution and until the representative of the Department could take charge.

Quarantine should be based on modern conceptions of how communicable diseases spread—from the excretions of patients and in many cases, carriers. This will mitigate many of the hardships formerly entailed when all exposed, including the breadwinner, were shut in for long periods of time.

General vaccination should be carried out under rules made prohibiting employers of labor to accept unvaccinated new employees; prohibiting unvaccinated children from attending school; and such other ordinances as would make vaccination as near a universal practice as possible.

Under the heading "control of disease" the activities of all branches of the Health Department could be mentioned. The Sanitary Engineer, in correcting water supply, and thus avoiding typhoid fever; preventing mosquito breeding to avoid malaria; abatement of fly breeding, etc., all would have their part in the control of disease.

The work of the laboratory in connection with rabies, syphilis, tuberculosis, etc., would be a part of this work.

Supervision of Production and Distribution of Milk.

This is an important health function and should always be under control of the Department of Health. Such local agents as are necessary, should be authorized, but cordial co-operation should be maintained with all municipal and other authorities working along similar lines. Food and drug inspection in general belongs to the Health Department, and can be advantageously administered under its jurisdiction. In controlling milk supply, cattle should be tuberculin tested; the construction and maintainence of dairy buildings be regulated; standards of purity be promulgated and controlled by laboratory examinations; pasteurization be required when advisable, and all phases of this important question receive due consideration. The frequency with which contaminated milk has been associated with outbreaks of communicable diseases, and increased infant mortality, demonstrates the importance of this work. The good results obtained when pure milk is furnished are shown by a generally lowered death rate; indicating that control of milk supply rightfully belongs to the Department of Health.

Board of Health Laboratory.

It is essential that every State Health Department have a hygienic laboratory as a part of its equipment. In the control of water supply, milk supply, and communicable diseases, the laboratory is a necessity. In addition to the examination of specimens of water, sewage, and milk, other work would be the diagnosis of rabies; the preparation of the material used in treating this disease; the preparation and distribution of anti-typhoid vaccine, and the distribution of antitoxin for diphtheria, tetanus and meningitis.

The laboratory would, for physicians, also examine specimens of pus and other material for diagnostic purposes, including sections of tumors to determine malignancy; make Widal reactions, and cultures of stools; examinations for intestinal parasites; and complement fixation tests for gonorrhea and syphilis.

Records of the work done by the laboratory would give material for instructive publications which should be issued from time to time.

School Hygiene.

Great benefit to individuals and to the public health is always the result of medical inspection of school children. This inspection should also include the teachers and janitors.

Not only are physically defective children located and remedial measures carried out by the parents and family physicians, but communicable diseases are limited by their early recognition. The importance of enlarged tonsils, adenoids, defective teeth, defective eyesight, etc., upon the subsequent mental and physical development of the child cannot be over-emphasized. During these inspections the Medical Officer should see that the children are vaccinated, and that they are free from trachoma; also that the lighting is proper; over crowding avoided; pure water furnished; proper toilet facilities provided; and that all surroundings are such as to promote health.

Open air schools for certain children should be provided.

It is properly the duty of the State Department of Health to urge upon the Board of Education to have hygiene taught in the public schools, in such a way that it will be remembered.

A remarkable feature of the awakening of interest in public health work has been the willingness of teachers to assist in this work. The intelligent co-operation of teachers, who are daily brought into contact with children, can accomplish much towards creating the right ideas of how health is maintained.

Care of Tuberculous Persons.

On account of the large number of tuberculosis sufferers in Arizona, it would seem that one or more State Institutions for their care should be a part of the equipment of the Department of Health. This does not mean that all indigent tuberculous persons attracted here from all over the States, on account of the belief that climate alone can cure should be given free treatment at the expense of the tax payers.

However, open cases of tuberculosis, now a menace to those with whom they come into contact, should be isolated. If all the money now spent by counties, cities, and private charitable organizations was available for a hospital for the care of this unfortunate class, it would go far towards the maintainence of a State Institution. The establishment of arrangements for the care of tuberculous persons, would not, if properly managed, increase the number of indigents migrating to this section seeking health, and would offer a partial solution for what is now a vexing problem to many sections of the Southwest.

Organization.

Having briefly outlined the functions of a Department of Health, and the work that should be undertaken and carried out by this important branch of State Administration, let us consider the personnel necessary, their tenure of office, and compensation.

Board of Health.

The usual number of members of a State Board of Health is five. Four of these should receive their appointment from the Governor of the State, for such periods of time that one member will retire each year, thus guaranteeing some continuity of organization.

Meetings should be held once each quarter. The fifth member of the Board, the Secretary, should be elected by the other members, he to be the Executive Officer of the Board. The Secretary and Executive Officer would be in effect, State Health Officer, and his tenure of office should be permanent, unless removed for inefficiency or other warrantable cause. The State Health Officer should devote his entire time to Board of Health work, receiving a suitable salary, and should not engage in private practice or any other outside business.

Additional officers to be employed by the Board of Health would be an Epidemiologist, a Sanitary Engineer, and a Bacteriologist. These three officials should also devote their entire time to the work and be removed for cause only. Where four officials of the Board of Health are permanent, full time, employees receiving adequate compensation, there should be some system of securing competent men.

Method of Appointment.

If men that have received the degree of Doctor of Public Health from some of the Universities conferring this degree, and well recommended, are available, such men would be eligible.

Otherwise, competitive examinations should be conducted to secure such suitable officials.

The United States Public Health Service is prepared to act as the examining body for just such positions, upon request. This service prepares the questions and sends them to the State Department of Health, or other appointive body. These questions are submitted to candidates; after the examination the papers are forwarded to Washington, marked by number only, where they are graded and returned to the State Board. In this way, Health Officers will be selected by reason of fitness, determined by a high standard, and the officer passing the examination has the satisfaction of having been certified by the Government Health Agency.

This provides for the four principal employees, or Officers of the Department of Health—the State Health Officer, the Epidemiologist, the Sanitary Engineer, and the Bacteriologist.

All other employees would be appointed by the State Health Officer, with the approval of the Board of Health, and would include as many District Health Officers as may be required and authorized; Public Health nurses; clerks, laboratory attendants, etc., as the work required.

Divisions of Work.

Let us briefly outline a proposed division of work for the four principal officials of the Department of Health.

Bureau of Statistics.

The State Health Officer would be the Chief of this Bureau, and have general supervision over all the activities of the entire Department. He would cause record to be made of all deaths, births, marriages, prevalence of disease, and all transactions of the Department, including disbursements and property records. An Annual Report should be prepared for submission to the Board of Health, and there should be printed a Monthly Bulletin for distribution among the physicians of the State, so as to keep them informed and interested in the work of the Department.

Popular leaflets should also be prepared for general distribution to the laity, especially school children, containing information on health subjects in simple language. Moving picture films, lantern slides, and models illustrating sanitary work prove interesting and extremely useful in educating the laity to avoid disease.

Bureau of Engineering.

The Sanitary Engineer would be in charge of this Division, under supervision of the State Health Officer. His work would be in connection with public water supply, sewage and garbage disposal, supervision of building regulations, etc. Upon request from County or City authorities, he would act as Consulting Engineer on any sanitary problem.

Bureau of Communicable Diseases.

The Epidemiologist would be in charge of this Division, under the supervision of the State Health Officer. His duties would be to investigate the origin of diseases; suppress epidemics; control milk supply; see that school inspection was carried out, etc. He would be the Department Officer under whom the District Health Officers would serve, and in his Division would be the Laboratory, under direct charge of the Bacteriologist.

District Health Officers.

These officials would have charge of all Health Department activities, of whatever nature, in their districts. The number of District Health Officers required, would depend on the distribution of population. No one district should be so large that the Health Officer could not properly handle the territory assigned to him. The District Health Officers should also be well paid, full time, competent representatives of the Health Department.

Through the District Health Officers there should be established cordial co-operation with County and City Health Officials, so as to get full advantage from their work.

Public Health Nurses.

These employees should perform the duties assigned to them by the State Health Officer, or District Health Officers under whom they were serving. Nurses working for the Department of Health can accomplish much good in preventing puerperal infection; ophthalmia neonatorum; working with school children; giving advice in infant feeding; instructing persons how to avoid spreading the communicable diseases; and many other ways.

Recommendations As to Salary.

The following officials of the Department of Health should receive not less than the salaries indicated:

Secretary and Executive Officer	$3,000.00
Epidemiologist	2,500.00
Sanitary Engineer	2,500.00
Bacteriologist	2,000.00

District Health Officers, nurses and other employees should receive appropriate compensation, determined after a careful survey of their field of activity.

Every state at the present time should have a well organized Department of Health. No asset of the state can compare in value to human life, our greatest national asset.

Two per cent of the general revenues of the state is not too much to ask for the support of this most important department, and the expenditure of this amount of money will be more than justified by the results attained.

DISCUSSION.

Dr. Geo. F. Huffman, Florence:—I was much interested in the very excellent paper of Dr. Pierce and have no doubt that the health organization as described by Dr. Pierce should be the ideal condition, but in Arizona sparsely settled as it is, with large areas of country with few inhabitants, such an organization as Dr. Pierce described would be almost impossible and the great question with us is what are we going to do under our present conditions. Even in our town communities I find it is almost impossible to get the support of local health boards. The Chairman of the Board of Supervisors, the County Attorney and the County Health Officer constitute the Board of Health of our County. In our county where I have been health officer for three years, we have had one meeting in that time. How are we going to stimulate the non medical members of our Boards to activity? In my county (Pinal) if I ask for a meeting of the Board of Health, they tell me that I am the health officer, to go ahead as long as I do not spend any money. Again, in regard to our vital statistics, how are we going to get competent local registrars. I have been able, by appointing the physicians of the different communities, to get a certain degree of efficiency. Yet every single physician refused to act when they found there would no longer be compensation. I have had to trust to Justices

of the Peace and sometimes he reports and sometimes not. How are we going to correct these things? I do not know. How are we going to get co-operation of our legislature to get the proper laws to take care of these things? I do not know.

Dr. J. W. Bazell, Holbrook, Arizona:—Dr. Pierce's paper is perfect in every way and expresses an ideal condition of affairs for Public Health work, but it is really a little too deep for me.

It has been twice suggested this morning that we should be more practical and I believe that we can achieve much more by sticking to the practicable things which we shall be able to carry out than to aim too high and lose out entirely.

I have attended these meetings for past five years and we have threshed out very much the same subjects each time and in my opinion if we are able to secure district nurses and medical inspection of schools we shall have accomplished much good and it will make it much easier to secure compulsory vaccination and full-time health officers, etc., later on.

Dr. B. B. Moeur:—Like the balance of you, I was very much interested in the doctor's paper; I think he has given us a lot of good ideas. Of course we cannot reach this thing in 24 hours or 24 days. We are a young state with a small amount of money, and I believe that if we get together in these meetings that we will finally get there, because I believe it is a matter of co-operation amongst physicians.

I wish to move that we extend a vote of thanks to the doctor for this paper. Motion was put and carried.

Dr. A. B. Nichols:—I would like to mention the fact that Maricopa County spent last year $841,000 for her schools. I am not in a position to tell you what was spent in the maintenance of the public health, but will assure you that it was very meagre. While I do not want to take a fall out of our County Superintendent of Schools or State Superintendent of Schools, I must say in regard to the county Superintendent of Schools that I have appealed to him to give us a little public health organization in our schools or emanating from our schools and the only thing I could get from him was that it was a good thing and he would be very glad to help us, but so far we have not received any assistance.

Dr. T. J. Bouldin:—I appreciate the doctor's remarks in regard to controlling epidemics, etc. The only trouble we have in our County is finding out where the epidemic starts. There is a difference between Dr. Huffman's county and our county. If I want to buy $ 230.00 worth of antitoxin, they say "Go to it." If we do not get results up there, it is the fault of the health officer.

Dr. J. W. Flinn:—I will tell you beforehand that I will not take the time to discuss the paper in detail. I agree with Dr. Moeur and the members of the Association that the Arizona Health Officers Association is under deep obligation to the U. S. P. H. and M. H. Service and Dr. Pierce for the presence of Dr. Pierce at this meeting and for his very valuable paper. The members will recall that last year a committee was appointed to consider the question of revising the Public Health law of Arizona. That Committee was composed of Meade Clyne, Meserve and myself. While we are not experts in public health work, far from it, simply babes in swaddling clothes, yet we spent considerable time during the year in consideration of this matter. We have carefully studied the reports of Carroll Fox, in regard to health organizations in the states named by Dr. Pierce. Incidentally the State Superintendent of Public Health has a request before the P. H. S. for the services of Dr. Fox or some other member of the department, in Arizona; I believe the Service has assured Dr. Looney that such an inspector will be sent. We regretted very much that the inspector could not have been in Arizona for several months before this meeting. The report of the Committee mentioned is to be read this afternoon and will give the results of the study of this committee during the year; the probabilities are that the subject will be thrown open for discussion at that time. I will say this now, that the Committee is of the opinion that under existing circumstances it is not desirable to ask for a full time health officer at the present time. We all look forward to the good time spoken of by Dr. Moeur, when we can have such a system as Dr. Pierce has outlined. I do not think Dr. Moeur will live to see that day, but I have no doubt I will. And we will think very kindly of Dr. Moeur when we talk about the very pertinent remarks he made here today. The question will come up this afternoon and if we have the pleasure of Dr. Pierce's presence at that time, we will expect to have him discuss our report.

Dr. Pierce, in closing:—I wish to thank you gentlemen for your resolution of thanks; I feel that I should be the one to thank the Association rather than the Association's thanking me. It has been a great pleasure to come here. Of course I know that you cannot reach forth and pull out a fully equipped Board of Health and install it in your state. But I think all you men have the same idea about this thing that I have; that is, that we should strive to attain something that is worth while, even though we know that we are not going to succeed this year in having the legislature raise the appropriation. The proper way to do is to get what we can each year, at the same time bearing in mind that the time to get a complete organization is now and not 15 or 20 years hence when the population is trebled; while we would be getting more money from taxes then, there would be greater difficulty in getting bills through the state legislature with the number of legislators increased and other things to detract interest from the value of public health work. It is problem that you have to work out gradually, but I think there should be some definite idea in your minds just what you want this department to do and just what you want, when you get what you do want. Have the skeleton organization in view, so that each little bill you get through or each increase of salary that is allowed, whenever you get public health nurses, bacteriological or other laboratory started, that all these things will finally fit into a complete and well rounded efficient health organization.

PROPAGANDA FOR REFORM.

Iron Cacodylate.—While manufacturers appear most ready to take advantage of the present interest in iron cacodylate by offering this in the form of capsules, etc., they have given little help to the A. M. A. Chemical Labratory toward the establishment of standards for this arsenic compound. Manufacturers are ever ready to sell drugs of all sorts, but in view of the small demand for little used drugs, they cannot or will not safeguard the identity and purity of such drugs (Jour. A. M. A., Nov. 25, 1916, p. 1593).

Dakin's Hypochlorite Solution.—The following procedure is claimed to have superseded the previously published formulas: Stir 200 Gm. chlorinated lime into 5000 Cc. ordinary water and let stand over night. Dissolve 100 Gm. anhydrous sodium carbonate and 80 Gm. sodium bicarbonate in 5000 Cc. cold water and pour this into the chlorinated lime mixture, and shake for one minute. After one hour siphon off the clear liquid and filter it through paper. A portion of this must not become red if a little dry phenolphthalein is added to it (Jour. A. M. A., Dec. 2, 1916, p. 1687).

Toxicity of Salvarsan.—From the reports of O. S. Ormsby and J. H. Mitchell, A. M. Moody and J. D. Ellis in The Journal A. M. A., Dec. 9, 1916, it would appear that some of the salvarsan recently on the market has been unusually toxic (Jour. A. M. A., Dec. 9, 1916, p. 1764).

Mayr's Wonderful Stomach Remedy.—More than a year ago the proprietor of Mayr's Wonderful Stomach Remedy pleaded guilty in the federal court to the charge that the claim that the nostrum was a cure for gallstones, appendicitis and all stomach, liver and intestinal diseases was false and fraudulent. Nearly a year later a placard over the store window of the Mayr establishment the following appears: "Mayr's Stomach Remedy, is the Only Known Cure For All Stomach, Liver and Intestinal Complaints. One Dose will Prove It." The federal Food and Drugs Act should have its scope extended so that all advertising for a product shall come under the purview of the act (Jour A. M. M., Dec. 9, 1916, p. 1774).

Arsenobenzol (Philadelphia Polylinic).—Dr. Schamberg explains that the Dermatologic Laboratory of the Philadelphia Polyclinic availed itself of the opportunity to supply their product when salvarsan was not obtainable. Having so served this purpose in the interest of humanity and the public health, the marketing of their product was discontinued when the German product became again available. The laboratory is not established for commercial purposes and could not afford to become embroiled in patent litigation which would no doubt be instituted by the owners of the salvarsan patent (Jour. A. M. A., Dec. 9, 1916, p. 1776).

Sulfo-Selene-Walker.—The New York Tribune explains that it was caught "napping" when it gave space to a discussion of Dr. C. H. Walker's cancer treatment, "Sulfo-Selene." It explains that, while there is probably no single false statement

in the published interview self-sought by Dr. Walker, the impression sought to be conveyed that Sulfo- Selene will cure cancer, rests on no such foundation of evidence as to justify a reputable and responsible physician in setting it forth in the public prints. The Tribune explains that Dr. Walker's preparation has failed to obtain that recognition which would have given it a scientific status, namely, recognition by the Council on Pharmacy and Chemistry (Jour. A. M. A., Dec. 16, 1916, p. 1864).

Bromin-Iodin Compound.—This preparation was submitted to the Council on Pharmacy and Chemistry with the following formula: "Iodin Gr. 1, Bromin Gr. 1-4, Phosphorus Gr. 1-100, Thymol Gr. 2-3, Menthol Gr. 2-3, Sterilized Oil fl. dr. 1". According to the promoters Bromin-Iodin Compound is "A Powerful Anti-Tubercular Agent for Hypodermic Use in Pulmonary and Laryngeal Tuberculosis." The Council declared the preparation ineligible for New and Non-official Remedies because the "formula" was impossible if it is intended to indicate the composition of Bromin-Iodin Compound; and meaningless if it is intended to indicate the ingredients used in the manufacture; and also because there was no satisfactory evidence for its therapeutic efficiency (Jour. A. M. A., Dec. 23, 1916, p. 1956).

Sodium Cacodylate in Syphilis.—While Nichols has shown that sodium cacodylate is worthless as a spirocheticide, it is still being used in the treatment of syphilis, and it is the essential constituent of venarsen, a proprietary syphilis remedy. As a result of extensive clinical trials, Dr. H. N. Cole concluded that sodium cacodylate has no spirocheticidal value. At the utmost it has perhaps a slight action on the papular and nodular syphilids, but in no case is this effect to be compared with that produced by mercury and potassium iodid. In cases of syphilis with mucous patches sodium cacodylate is worse than useless (Jour. A. M. A., Dec. 30, 1916, p. 2012).

Tanret's Pelletierine.—The exact composition of Tanret's Pelletierine is not known, but is believed to be similar to the pelletierine tannate of the U. S. P. This is said to be a variable mixture of the tannates of four alkaloids of pomegranate. As only two of the alkaloids have teniafuge properties the activity of the different preparations varies with the proportion of these alkaloids which are present (Jour. A. M. A., Dec. 30, 1916, p. 2030).

Quinine Injection.—By taking proper precautions the number of cases of abscess formation and necrosis from the injection of quinine may be greatly reduced, but the danger of their occurrence cannot be entirely eliminated. For this reason all authorities agree that the administration of quinine by injection should be confined to the most urgent cases of pernicious malaria. The two most important precautions are, that the injection must be intramuscular and that the solution should be dilute, not stronger than ten per cent. The best salts are quinine dihydrochloride and quinine and urea hydrochloride (Jour. A. M. A., Dec. 30, 1916, p. 2030).

The Status of Antipneumococcus Serum.—The injection of the proper antipneumococcus serum in pneumonia caused by pneumococcus Type 1 is believed to be beneficial, but the serum treatment of pneumonia is still in the experimental stage. The pneumococci fall into various groups according to their immunologic relations and the first requisite for a rational use of the serum treatment of pneumonia is the determination of the particular type of the pneumococcus concerned in a given case (Jour. A. M. A., Dec. 30, 1916, p. 2030).

CHARITY CLINICS IN EL PASO.

In accordance with the new state law, the work of caring for the afflicted poor in El Paso County and City has been organized so as to provide medical and surgical attention without pay. Both the County Hospital and the dispensary regular clinics have been established with a staff for each of the specialties. It is confidently anticipated that great benefit will result to the sick poor and also that the large and valuable clinical material, so long neglected, will prove useful in widening the experience of the medical men of El Paso.

For the present the following appointments have been made:

Medicine: Drs. G. Werley, J. A. Pickett; infectious diseases, Dr. J. W. Tappan, T. J. McCamant; tuberculosis, Drs. W. R. Smith and C. M. Hendricks.

Surgery: General, Drs. James Vance, F. P. Miller, E. B. Rogers and K. D. Lynch; orthopedic, Dr. W. L. Brown; genito-urinary, Dr. W. R. Jamieson; oral, Dr. L. G. Witherspoon.

Diseases of children: Drs. J. A. Rawlings and Branch Craige.

Diseases of the eye, nose and throat, Dr. E. R. Carpenter.

Diseases of stomach and intestines: Drs. F. D. Garrett and E. C. Prentiss.

Obstetrics and gynecology: Drs. Hugh S. White, J. M. Richmond and G. N. Thomas.

X-Ray: Dr. J. W. Cathcart.

NEWS NOTES.

Dr. W. A. Evans, former commissioner of health of the city of Chicago, stopped over in El Paso on March 10th, 11th, and 12th, on his return from California, where he has been making some talks on health legislation. Dr. Evans was given a dinner by about fifteen members of the El Paso profession, at Hotel Sheldon, Saturday evening, and after the dinner, he talked on health insurance.

Dr. M. G. Paden, division surgeon of the El Paso & Southwestern at Carrizozo, made a professional trip to El Paso.

Dr. F. C. Diver, chief surgeon of the Dawson fuel interests at Dawson, N. M., spent several days in El Paso during the month of March.

Dr. W. P. Lee and wife were called to El Paso from Cisco, Texas, on account of the severe illness of their son, with pneumonia, the latter dying on March 12th.

Dr. C. F. Montgomery and wife of Roswell spent several days attending the Cattlemen's Convention at El Paso.

Dr. W. T. Brown, superintendent of the Valmora Sanitorium, at Valmora, Texas, was calling on friends in El Paso during March.

Dr. Britton, late of Cisco, Texas, has recently located in El Paso in the practice of his specialty, eye, ear, nose, and throat.

THE CLINICS OF JOHN B. MURPHY, M. D.

Volume V, No. 6 (December, 1916).

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago, Volume V, No. 6 (December, 1916). Octavo of 217 pages, 47 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Published Bi-Monthly. Price per year: Paper, $8.00; Cloth, $12.00.

The editor of Murphy's Clinics makes this announcement in the last number of the Clinics: "Mindful of a deep sense of responsibility to the readers of the Clinics, to the profession at large, and especially to posterity, the Editor has sought to present in this last number not only Dr. Murphy's last teachings, but an account of his last illness and words In Memoriam by his most intimate colleagues."

Dr. E. Wyllys Andrews, Dr. J. F. Binnie, Dr. Geo. W. Crile, Dr. Jno. B. Deaver, Sir Rickman J. Godlee, Sir W. Arbuthnot Lane, Dr. Ernest Laplace and Dr. Edward Martin contribute short articles of appreciation.

The Medical History and last illness of Jno. B. Murphy is told by Doctors C. L. Mix, R. H. Babcock, J. E. Kiefe and W. A. Evans.

The usual number of case reports and illustrations are to be found while the number concludes with a list of the writings of the late Doctor Murphy.

It is not the duty of the reviewer at this time to write of Doctor Murphy's life and his wonderful surgical skill. We leave this to other and more competent ones.

With the death of Doctor Murphy modern surgery lost its greatest surgical teacher.

The recent death of Doctor John B. Murphy puts an end to Murphy's Clinics. Mess. W. B. Saunders & Company announce the publication of a new bi-monthly, The Surgical Clinics of Chicago. The first number to be issued in February. The price will be $8 per annum in paper covers and $12 per annum in cloth.

PROGRESSIVE MEDICINE.—A Quarterly Digest of the Advances, Discoveries and Improvements in the Medical and Surgical Sciences, edited by Hobart Amory Hare, M. D., and Leighton F. Appleman, M. D., December, 1916, Volume XIX, No. 4. Lea & Febiger, Philadelphia. Six dollars per annum.

The December number of Progressive Medicine contains a review of the literature of the year on Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas and Peritoneum by Goodman; Diseases of the Kidneys by Austin; Genito Urinary Diseases by Bonney; Surgery of the Extremities, Shock, Anesthesia, Infections, Fractures and Dislocations, and Tumors by Bloodgood; a Practical Therapeutic Referendum and the Index.